

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 83-7127
Exam Date: 10/5/2020

1. Current Owner:

IDWR's database shows that the permit holders are:

STATE OF IDAHO DEPT OF FISH & GAME
C/O OFFICE OF THE ATTORNEY GENERAL MICHAEL ORR
PO BOX 83720
BOISE ID 83720-0010

US DEPT OF DEFENSE DEPT OF ARMY CORPS OF ENGINEERS
201 N 3RD ST
WALLA WALLA WA 99362-1876

Ownership of the water right will be clarified through the licensing process. I made contact with interested parties but to date I have not received a formal response to my requests for an update to the ownership.

The Clearwater Fish Hatchery was constructed by the U.S. Army Corps of Engineers (USACE) under the Lower Snake River Compensation Plan (LSRCP). The State of Idaho Department of Fish and Game operates the hatchery with funding provided through the U.S. Fish and Wildlife Service (USFWS) and the Lower Snake River Compensation Plan Office. The correct owner of this water right is likely to be the USFWS. According to Clearwater Fish Hatchery Manager, Joel Patterson, the correct owner of this water right is the USFWS at the LSRCP Office. The contact information is:

LSRCP Office, USFWS
1387 S Vinnell Way, Suite 343
Boise, ID 83709
Phone No. (208) 378-5321

2. Accompanied by:

Adam Frederick and Luke Bates from IDWR's Northern Region office visited the site and confirmed the beneficial use on my behalf. They were guided by the Clearwater Fish Hatchery Manager, Joel Patterson. This report is a review and summary of the examination notes and photos. I did not make another visit to the site. When needed, I requested additional information from State of Idaho Department of Fish and Game (IDFG) personnel, the current operators of the hatchery. Contact information for the Clearwater Fish Hatchery is:

Address: 118 Hatchery Roe Dr
Ahsahka, ID 83520
Phone No: (208) 476-3331

Contact information for the hatchery operator, IDFG is:

Address: 600 S Walnut St
Boise, ID 83712
Phone No. (208) 334-3700

3. Source:

NORTH FORK CLEARWATER RIVER

Tributary:

CLEARWATER RIVER

Method of Determination:

The confluence of the North Fork of the Clearwater River with the main stem of the Clearwater River appears in U.S. Geological Survey's Quad map, Ahsahka K58. That map is current as of 1994 and available as a U.S. Geological Survey's DRG (Digital Raster Graphic) image in ArcMap software.

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
- No
- Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: Domestic water use on the hatchery grounds is provided by the local municipal provider, Ahsahka Water and Sewer District.

2. Other water rights with the same point-of-diversion:
- Yes
- Overlap

Water Right No.	Source	Purpose of Use	Basis
83-7102	North Fork Clearwater River	Power	Permit
83-7103	North Fork Clearwater River	Power	Permit
83-7133	North Fork Clearwater River	Power	Permit

Comments: There are two separate intakes, one for each of two pipelines. The two points-of-diversion (PODs) and the associated diversion pipelines are shared by the Idaho Water Resource Board's Dworshak Small Hydroelectric Project and by the Dworshak National Fish Hatchery.

The overlapping water rights for power use listed in the table above were developed after the proof for Permit 83-7127 was received. The power use has been confirmed but as of the date of this report, licenses have not been issued for the rights.

I found no record that the State of Idaho authorized the appropriation of water for use in the Dworshak National Fish Hatchery.

Both PODs are located within the same Public Land Survey System aliquot part: L2 (NW¼ NE¼), Sec. 35, Twp 37N, Rge 01E, B.M. But that part differs from the location authorized by the permit. An amendment of the permit to correct the addresses of both PODs will be sought before a license is issued.

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

NORTH FORK CLEARWATER RIVER L2 (NW¼ NE¼), Sec. 35, Twp 37N, Rge 01E, B.M. CLEARWATER County
 NORTH FORK CLEARWATER RIVER L2 (NW¼ NE¼), Sec. 35, Twp 37N, Rge 01E, B.M. CLEARWATER County

Method of Determination:

Global Positioning System (GPS) coordinates of both intakes were taken from the spillway bridge deck of Dworshak Dam during the field exam visit. Those points were then compared to the U.S. Geological Survey's DRG (Digital Raster Graphic) image available in ArcMap. An existing GPS'd point, SpatialData point 294854, was chosen to represent the floating intake. The horizontal location of the floating intake can vary somewhat but it appears to be confined within government lot 2 (NW¼ NE¼).

I created the second POD to represent the fixed pipe's intake. It as SpatialData point 534157.

2. PLACE OF USE: FISH PROPAGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
37N	01E	33													X			X	
37N	01E	34										X	X						

Method of Determination:

The place-of-use (POU) is the Clearwater Fish Hatchery which is currently operated by the State of Idaho's Department of Fish and Game. The hatchery is visible in aerial photography and its boundaries were confirmed during the field exam.

The Clearwater Fish Hatchery (CFH) and the Dworshak National Fish Hatchery (DNFH) coordinate in sharing the water deliveries from the water supply system, but the DNFH is not an authorized place-of-use for this permit.

3.

☒ Delivery System Diagram Attached (required). See attachment #1☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.☒ Aerial Photo Attached (required for irrigation of 10+ acres).☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
	Not applicable			Not applicable	

There are no pumps driving the flow of water. The Clearwater Fish Hatchery has a gravity flow system.

5. LOCATION OF POINT(S) OF DISCHARGE:

CLEARWATER RIVER SE¼ SE¼, Sec. 33, Twp 37N, Rge 01E, B.M. CLEARWATER County

Method of Determination:

A plume indicating the discharge from the hatchery can be seen in aerial photography. The point of discharge is also shown in one of the field exam photos.

D. FLOW MEASUREMENTS1. MEASUREMENT EQUIPMENT

Location	Type	Make	Model No.	Serial No.	Size	Calibration Date
On primary pipe	Clamp-on ultrasonic transducers				*24 inch outside diameter	Not applicable
On secondary pipe	Clamp-on ultrasonic transducers				*14 inch outside diameter	Not applicable
At discharge weir	ultrasonic	Siemens controller and transducer	SITRANS LUT400			10/9/2020

*The pipe diameters vary throughout this water diversion and distribution system. They are narrowest where the pipeline measurement devices are located.

2. MEASUREMENTS:

Intake

Because access to the maintenance gallery containing the measurement devices for the two pipelines is located within Dworshak Dam and is restricted to authorized personnel only, the field examiners were not able to see and confirm placement of the required measuring devices. Photos showing two ultrasonic meters mounted on two different pipelines were provided to me by Joel Patterson in advance of the exam. Please refer to his email dated 10/2/2020.

At the time of the field exam, the sum of the instantaneous readings from those two ultrasonic meters was 89.7 cubic feet per second (17.3 + 72.4 = 89.7). See the field examiner's photos of each meter's display screen.

(Note that this total diversion rate exceeds the maximum diversion rate of 89 cubic feet per second (cfs), authorized by this permit.)

Discharge

The field examiners did not make a manual measurement of the discharge from the weir on the day of the exam. The examiners stated that they understood that the automatic measurement at the weir would be questionable.

I discussed the discharge measurement in a follow-up phone conversation with Joel Patterson on 10/19/2020. He

stated that the automatic measurements at the weir site had been erratic in spite of recent vegetation removal and calibration of the discharge rating. He also stated that a Siemens authorized service technician had found that the transducer was failing and recommended that a replacement be installed.

At my request Mr. Patterson provided a reading from the discharge meter's display screen and took a manual measurement at the weir. See his emails dated 10/19/2020 and 10/20/2020. The discharge measurements indicated that CFH was utilizing approximately 53.4 cfs and less than this permit authorized. But a comparison of the intake and discharge measurements indicated that a quantity of water was unaccounted for. The difference between the total of the intake measurements and the discharge measurement was approximately 36 cfs. $(89.7 - 53.4 = 36.3 \text{ cfs})$.

The Siemens recorder at the discharge showed 53.39 cfs which varied less than 2% from the manual reading and calculated flow of 54.6 cfs. (For calculation see the rate calculation section below). Faulty equipment didn't account for the difference.

In his 10/20/2020 email, Mr. Patterson states that he had called DNFH and confirmed that that hatchery was utilizing approximately 25 cfs of water originating from the distribution structure. The permitted diversion rate was being exceeded that day and likely is exceeded on other days, but the excess water was not being used at the authorized place-of-use.

Nearly all of the water beneficially used at CFH is discharged through a single pipe, at a single point.¹ That discharge is authorized and regulated by a National Pollutant Discharge Elimination System (NPDES) Permit which typically has discharge measurement and reporting requirements. I requested historical NPDES discharge measurements from the current operator but those records could not be located.

I connected with Idaho Department of Environmental Quality and requested information related to the discharge from CFH. IPDES Bureau Chief, Troy Smith responded to my request. Mr. Smith confirmed my understanding that the US Environmental Protection Agency (EPA) Region 10 had jurisdiction over the discharge from CFH. He provided links to a copy of EPA's general permit for the discharge from Aquaculture Facilities in Idaho and a Fact Sheet which lists the Clearwater Fish Hatchery among the permittees. See Mr. Smith's email to me dated 12/4/2020.

The current discharge permit is effective December 1, 2019 - November 30, 2024 and according to the Fact Sheet, the maximum discharge from the CFH is expected to be no more than 77.5 cfs.

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

MEASURED METHOD:

I believe that Mr. Patterson used the following equation (a.k.a. the Francis formula) to calculate a flowrate from his measurement at the discharge weir. For q in cfs the equation is: $q = 3.33 (b - 0.22 h) h^{3/2}$ where:

b is length of the weir in feet (123.4 feet)

h is height of water cresting over the weir in feet (3.125 inches = 0.2604 feet)

and yields $q = 54.58 \text{ cfs}$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: Not applicable

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses:

Fish Propagation

The Department of Water Resources Beneficial Use Examination Rule IDAPA 37.03.02.035.k states,

"The total number of holding/rearing ponds and the dimensions and volume of the ponds shall be shown on the field report for fish rearing or fish propagation use. The annual volume shall be calculated based on the changes of water per hour."²

The required tally of the water use spaces at the Clearwater Fish Hatchery and their dimensions and volumes can be found in Table 1 of the attached spreadsheet. I culled most of the information from the 1992-1993 Brood Year Report

¹ Some of the CFH water is beneficially used in tanker trucks which transport fish off-site. I consider that use as a subset of the authorized fish propagation use and that the volume of transported water is unlikely to change the overall maximum volume for the license.

² <https://adminrules.idaho.gov/rules/current/37/370302.pdf>

which was provided to me via email by Beau Gunter Idaho Department of Fish and Game (Hatchery Complex Manager)³ Mr. Gunter also confirmed the sizing and provided a missing dimension.

IDAPA 37.03.02.035.k also requires that the annual volume of water beneficially used should be based on calculations of water changes per hour through the facility. Rule-required volume calculations can also be found in Table 1 of the attached spreadsheet but I am not recommending a volume based water changes for this license. See the volume section below for more discussion regarding the maximum volume that I recommend for the license.

G. NARRATIVE/REMARKS/COMMENTS

Although I found data entry of 8/23/1999 as the field exam date for this right, the water right file did not contain a completed Beneficial Use Field Report or any other trace of that exam. I notified Northern Region of the information gap and personnel from that office quickly scheduled and completed the necessary field exam on October 5, 2020.

Ownership

Ownership of this permit, of the associated project and the project's features is complex and ideally should be clarified before a license is issued. The water right file is lacking the assignments, easements and agreements which would have been required for construction and continued operation of the project. In the process of the review for licensing, I have located some of the missing documents. I am required to address my licensing recommendations to the permit holders-of-record.

Application-Permit

Permit #83-7127 began life as an Application for Permit which was submitted to IDWR by the U.S. Army Corps of Engineers (USACE) in May 1993. At that time, the application was numbered by IDWR as 85-7593. USACE had possessory interest in the properties proposed for the point-of-diversion and place-of-use but at their request, the applicant was changed to State of Idaho Department of Fish and Game (IDFG). No completed form assigning the application is found in the water right file.

The application continued to carry the Basin 85 water right number through initial reviews and was advertised without protest. Although there is no explanation in the water right file, the water right number was changed from 85-7593 to 83-7127 just before the permit was issued. That number change recognized that the location of the proposed point-of-diversion was within IDWR's Administrative Basin 83 (the North Fork of the Clearwater River) rather than Basin 85 (the Clearwater River).

In February 1994, at the request of IDFG, IDWR updated ownership of the permit to add the U.S. Department of Defense as joint permittee. The request was honored but there is no completed form assigning the permit in the water right file.

Points-of-Diversion

According to available parcel information from Clearwater County, the headworks of the Clearwater Fish Hatchery pipelines are located at Dworshak Dam which was built and is owned by USACE.

There are two intakes on the upstream face of the dam, an intake dedicated to each pipeline. One is a floating intake which can continue to divert water even as the reservoir level rises or falls, typically from 1445 to 1600 feet mean sea level. The other is a fixed intake located near the bottom of the reservoir. The position of the floating intake can vary in both the horizontal and vertical directions. It is the larger of the two intakes and it normally accesses warmer, near-surface water at temperatures of 55°F or greater. The smaller intake is a fixed intake located below the minimum pool elevation of the reservoir. It accesses colder water at a virtually constant temperature of 40°F. Although both intakes are screened, but it's not clear that the screens meet current fish screening requirements.

Water Supply Project

The Clearwater Fish Hatchery Water Supply is a Lower Snake River Fish and Wildlife Compensation Plan water project which includes intakes, diversion pipelines, a distribution structure, and distribution pipelines. All components of this water supply project were constructed by USACE. The original engineering design calculations and sketches by James M. Montgomery, Consulting Engineers, Inc., as well as the USACE as-constructed engineering drawings are available in an Idaho Water Resource Board archive.⁴

The pipes vary in diameter as they carry water from the dam to the distribution structure and then to the two hatcheries. Through all the reductions and expansions, the primary pipeline is always the larger of the two pipes and carries the warmer water while with the smaller secondary pipeline carries the colder water.

³ Brood reports can also be found at <https://collaboration.idfg.idaho.gov/FisheriesTechnicalReports>

⁴ N: Planning Bureau/Water Board-Facilities/Dworshak/

The maximum capacity of the pipelines has been measured. See the discussion in the Water Use section below.

Diversion Pipelines

When the two pipes pass through the downstream face of Dworshak Dam, they are carrying water at high pressure in a 36-inch diameter primary (warm water) pipe and an 18-inch diameter secondary (cold water) pipe. The examiner's photos show the pipe track across the face of the dam.

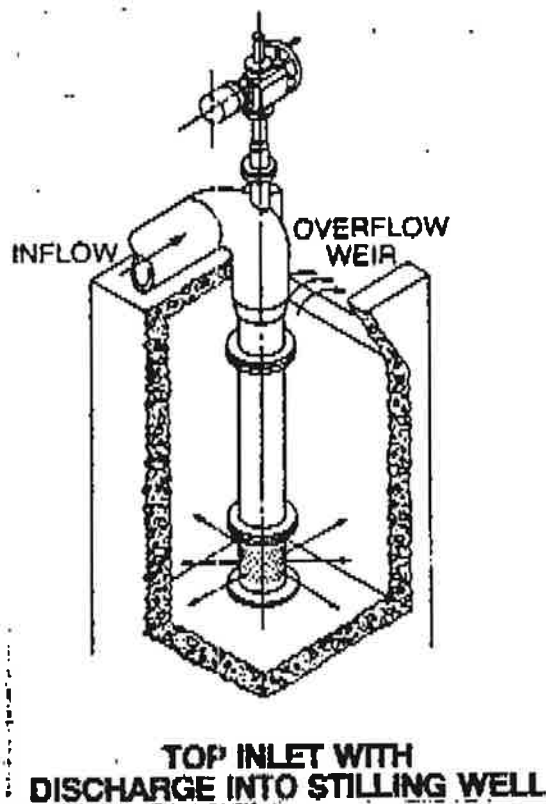
After edging the tailrace training area below the dam, the pipes are buried beneath the left bank of the North Fork of the Clearwater River. The two pipes are laid parallel with each other and are roughly aligned with the North Fork of the Clearwater River. They traverse USACE-owned land until they reach the distribution structure, which is located on property owned by the Bureau of Land Management.

Distribution Structure

The distribution structure is essentially a multi-chambered headbox. It provides a consistent and controllable water supply to both the Clearwater Fish Hatchery and the Dworshak National Fish Hatchery. The water piped from Dworshak reservoir enters the distribution box at high pressure and leaves at low pressure suitable for fish propagation.

Some features of the Distribution Structure were remodeled to suit the addition of the Dworshak Small Hydroelectric project to the upper floor. The description below is based on available engineering drawings and calculations dated from before construction of the hydroelectric project.

Before entering the distribution structure, the water piped from Dworshak reservoir passed through two manifolds; one on the primary pipe and one on the secondary pipe. There the water was divided and flowed into two additional pipes. A total of four pipes entered the distribution structure, two pipes carrying cold water and two pipes carrying warm water. Each of the four pipes then discharged the water through a vertical sleeve valve and into a stilling well similar to the illustration below.⁵



⁵ Since 2000, the pressure relief has been accomplished by two hydropower turbines. The sleeve valves are still located on the water paths but they are routinely kept closed.

The depressurized water then flowed from each of the stilling wells, across overflow weirs and into either a warm water or a cold water distribution tank. The cold and warm waters are not combined but are kept isolated from one another. As the hatcheries withdraw water from the distribution tanks, level sensing devices in each distribution tank activated the pressure reducing valves to release more water from the diversion pipelines into the stilling well side of each distribution tank.

At the base of each distribution tank are two outlet pipes; one for each hatchery, for a total of four outlet pipes. And each distribution tank has an overflow weir which accommodates sudden changes or errors in system operation. CHF personnel control the flow rates and maintain an overflowing water surface elevation in the Distribution Structure to stabilize the flow.

Overflow from the distribution tanks enters a shared pipe that discharges excess water into the North Fork of the Clearwater River. This means that more water is routinely diverted from Dworshak Reservoir than is re-diverted at the distribution structure for use at the hatcheries.

After the development period of this permit, a hydropower generation facility was constructed on top of the distribution structure. The stilling wells and distribution tanks are now also the foundation and footing of the Dworshak Small Hydropower facility which is owned by the Idaho Water Resource Board. Construction of the powerhouse was completed in June 2000⁶.

Water Distribution Pipelines

At the distribution structure, the primary (warm) water and the secondary (cold) water are re-diverted from the primary or secondary distribution tanks. The distribution pipelines are not interconnected. Water is piped separately to CFH and DNFH through pairs of primary and secondary pipelines dedicated to each hatchery.

The distribution pipes vary in diameter. As they exit the distribution structure the primary pipe to CHF is 42 inches in diameter, the secondary pipe is 20 inches in diameter. Both pipes are reduced as they tunnel under the North Fork of the Clearwater River upstream of the Cavendish Highway Bridge. The two pipelines conveying water from the distribution structure enter the southeast corner of the CFH campus in the NW1/4 of the SW1/4 of section 34.

Place-of-Use

The place-of-use property is not owned by the State of Idaho Department of Fish and Game. According to available Clearwater County parcel information the Clearwater Fish Hatchery is located on parcels owned by USACE, in Walla Walla, WA or by the Clearwater National Fish Hatchery, in Boise, ID.

I confirmed with Joel Patterson that the correct name for the place-of-use is the Clearwater Fish Hatchery (not National).

Point-of-Discharge

The spent water from the Clearwater Fish Hatchery is discharged into the main stem of the Clearwater River. Clearwater County parcel information indicates that the discharge pipe is located in the riparian zone on the north side (right bank) of the Clearwater River.

Both the North Fork of the Clearwater River and the main channel of the Clearwater River are considered navigable rivers, subject to the Rivers and Harbors Act Section 10 Permit and under the jurisdiction of the Walla Walla office of USACE.

According to the available pipe layout drawing of CFH, the hatchery discharge pipe daylighted above the ordinary high water mark of the river and therefore did not require a stream channel alteration permit.

Water Use

Operation strategy

The Clearwater Fish Hatchery was designed for species conservation rather than for food production. With that focus, the best possible water environment for the species is sought and a limitation on water means a limitation on fish.

The volume of reservoir water available to the hatchery is authorized by USACE as operators of Dworshak Dam. The flow rate of the water is controlled by CHF personnel according to the needs of the fish species and their varying life stages. The ideal water temperature mix is achieved by adjusting the flow from each diversion pipe.

⁶ For additional information on that facility see the backfiles for water rights 83-7102, 83-7103 or 83-7133.

Storage

There are no pumps moving water through the Clearwater Fish Hatchery (CFH). The hatchery operates by gravity flow. The elevation change from the water surfaces in the distribution structure to the water surfaces in the hatchery makes gravity flow through CFH possible. The diversion structure holds approximately 31,450 cubic feet of water⁷. At the diversion rate I am recommending for this license, that volume of water would be delivered to the CFH in less than a day.

The quantity of water temporarily held in the distribution structure doesn't justify a storage use on this right. But the only source of water to the distribution structure and then to CFH is water that is stored behind Dworshak Dam. That stored water makes reliable delivery of water to CFH possible.

IDWR's Dam Safety section has certified Dworshak Dam to impound water up to its design normal pool elevation of 1600 feet mean sea level. The usable storage is 2,016,000 AF but there is no water right authorizing any storage of water behind the dam.

Under its original authorization (PL 78-534), Dworshak Dam was constructed for flood control purposes and as such may not have required a water right. But as a result of subsequent legislation, the operation of Dworshak Dam and Reservoir has been revised to provide for other water uses. The water right authorizations have not kept up with the additional and alternative uses.

The water stored behind Dworshak Dam develops and maintains a temperature stratification through much of each year. The water near the surface of the reservoir is warmer, typically 50-60° F, while water stored at the bottom of the reservoir has a nearly constant temperature near 40° F. The intakes for the two pipelines are located at different depths which gives CFH access to waters of different temperatures. And similar to the hot and cold water in our houses, CFH has the ability to control the water temperatures in the hatchery spaces, optimizing them for the preferred hatching or rearing conditions of each fish species.

When Dworshak Dam was constructed it did not include fish passageways. The dam not only eliminated access to fish habitat in most of the North Fork of the Clearwater River but it also limited the spread of the diseases which would have accompanied those migrating fish. The resident fish in the river below the dam routinely carry contagious, often fatal diseases but because those fish cannot swim past the dam and into the reservoir, the reservoir water is comparably disease free.

The flow rate and volume of water diverted through the pipelines are a small fraction of the water stored behind and discharged from Dworshak Dam. But the only source of water for CFH is the water piped from Dworshak Reservoir through the dam and distribution structure. And courtesy of those pipelines, CFH has access to water with highly desirable attributes for fish propagation; the water has predictable temperature differentials and is relatively disease free.

This water right is for a flow that originates from stored water and although the water storage exists, it is not authorized by any water right. To complement this right, a companion water right for fish propagation storage is needed.

Fish Propagation Use

Construction of Clearwater Fish Hatchery was completed in 1991. It does not have fish trapping capability but is instead designed to hatch and rear steelhead trout and Chinook salmon from eggs or stock provided to it by other facilities. The first fish to populate the hatchery were rainbow trout; test fish that arrived in January 1992. The rainbow trout were hatched and reared at the hatchery to make sure all the systems worked properly. The first steelhead and Chinook salmon arrived at the Clearwater Fish Hatchery a few months later in 1992.

Permit 83-7127 was issued on October 18, 1993 with 'proof' expected on or before October 1, 1994. So when the permit was issued, the Clearwater Fish Hatchery was already in operation. The Proof-of-Beneficial-Use statement for this right was received on September 1, 1994 making the length of the formal development period for the permit a little less than a year.

I was able to confirm beneficial use of water for fish propagation during the development period by requesting and receiving additional information from the State of Idaho's Department of Fish and Game (IDFG), the current operator of the hatchery. Mr. Beau Gunter (Hatchery Complex Manager, Clearwater Regional Office) provided copies of three Brood Year Reports (see his email dated 9/10/2020). The Brood Year Reports span the development period and provide evidence of fish propagation at the facility within the time-frame that Permit 83-7127 was active.

⁷ This volume was calculated from dimensions found on the engineering drawings of the distribution structure.

Rate

I am recommending the total maximum capacity of CHF's distribution pipes as the flowrate for the license. I am recommending 79.8 cfs; 70.7 cfs from the primary pipeline, and 9.1 cfs from the secondary pipeline. This recommendation is not based on any arbitrary instantaneous measurement of the flow rate. Instead it is based on the results of extended testing in May and August of 1994 of the pipelines delivering water from Dworshak Dam to the distribution structure and the pipelines delivering water from the distribution structure to CFH. The testing was conducted at the request of CFH to USACE and the results were provided to CHF personnel in a letter dated October 5, 1994. See Mr. Gunter's email to me dated 10/28/2020⁸ and Attachment #2.

The 1992-1993 Brood Year Report indicates that fish were in residence and that some fish propagation continued even during the pipeline tests.

Volume

Beneficial Use Examination Rule IDAPA 37.03.02.035.k requires a listing of dimensions and volumes of the ponds and raceways used for fish propagation and that an annual volume be based on changes of water per hour. The required list and volume calculation can be found in Table 1 of the attached spreadsheet.

The total volume of the fish propagation spaces at CFH is approximately 318,800 cubic feet. Based on the maximum flow rate that I am recommending, CFH would achieve a turnover of 287,280 cubic feet per hour or a turnover of 0.9 of the facility's volume every hour. This turnover rate is much less than desired⁹.

The field examiners confirmed that some raceways were empty on the day of the exam and stated that the cause was insufficient water. CHF has responded to flow rate limitations by idling some of the facility's raceways.

I disagree with the volume requirement of IDAPA 37.03.02.035.k. because a volume which is based on water changes ignores the size, quantity or even the presence of fish in a fish propagation facility. In the case of this permit, condition 5 puts a reality check on the water use by stating that volume changes per hour be based upon actual fish production. But I am not recommending a volume that is based on an unceasing rate of water changes of per hour.

The flow of water to CHF is rarely interrupted, but water does not flow at the maximum rate continuously. The flow rates vary by the temperature requirements of the resident fish and are typically adjusted a few times each month.

From the onset, water diverted and delivered through the water supply system has been shared between CHF and DNFH. I was unable to locate any documentation of the total volume of water use or how much water was shared with DNFH during the development period of this permit (October 18, 1993 – September 1, 1994). But I do know how the two hatcheries share the water now and believe that a sharing arrangement has been in place since 1997.

In an email to me dated 9/23/2020, Mr. Gunter provided an attachment which is labeled Shared Water Agreement (see Attachment #3A). I also found a similar pattern of shared flows in a table created in 1997 by IDWR personnel¹⁰. (see Attachment #3B).

I am recommending a volume that is based on the total monthly flow rates for CFH as they are shown in Clearwater Hatchery Water Supply, Actual Use 1997, a table found in Attachment #2. For the license, I am recommending a maximum volume limit that is 52,620.27 AFA which when rounded to 3 significant figures is 52,600 AFA. For the volume calculations, see Table 2 of the attached spreadsheet.

Season of Use

Clearwater Fish Hatchery operation varies by fish species and their respective life stages but the hatchery operates year-round so a year-round season-of-use is appropriate.

Conditions

I found that the project is being operated in compliance with the conditions of Permit #83-7127. Only a few conditions need additional discussion.

⁸ More legible copy of the test results and correspondence between CFH and USACE were among IWRB project documents. Those documents are Attachment #2 to this field exam report.

⁹ Administrative guidance found in Application Processing Memorandum #15 states that 2.5 turnovers per hour is expected for trout rearing. Very similar turnover rates would be expected for the propagation of steelhead trout and Chinook salmon.

¹⁰ See page 3 of the backfile for 83-7133 [\\dwrboifsvp02\DocsData\WATERRIGHTS\83\SMERRITT\52101 .PDF](#) In 1997, Ralph Mellin was manager of IDWR's Programs Section. He was the primary contact for the IWRB's Dworshak Small Hydroelectric Project.

Permit condition 3

This condition states, "Water used under this right if discharged into a natural channel or subsurface system shall meet Idaho Water Quality Standards."

The Clearwater River receives the discharge from CFH and that river is considered a tribal water. So Region 10 of the Environmental Protection Agency, rather than the State of Idaho, is tasked with regulating the discharge from CFH. The current discharge permit is IDG131002 under the umbrella NPDES General Permit IDG133000.¹¹

Permit condition 5

This conditions states,

The right holder shall be required to provide the Department, upon request, information showing volume changes per hour necessary to maintain an adequate environment for the fish propagation facility. Volume changes per hour shall be based upon actual fish production.

I discussed this condition with Mr. Beau Gunter and I consider that the information he provided to me satisfies this condition.

Permit condition 6

The required measuring devices have been installed and are maintained.

Rather than at the points-of-diversion, two measuring devices are installed on the pipelines 100 - 200 feet downstream from their respective intakes.

The discharge measuring device is a sharp crested overflow weir that is integrated into the downstream wall of CFH's terminal settling basin.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
FISH PROPAGATION	01/01 to 12/31	79.8 CFS	52,600 AF
Totals:		79.8 CFS	52,600 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

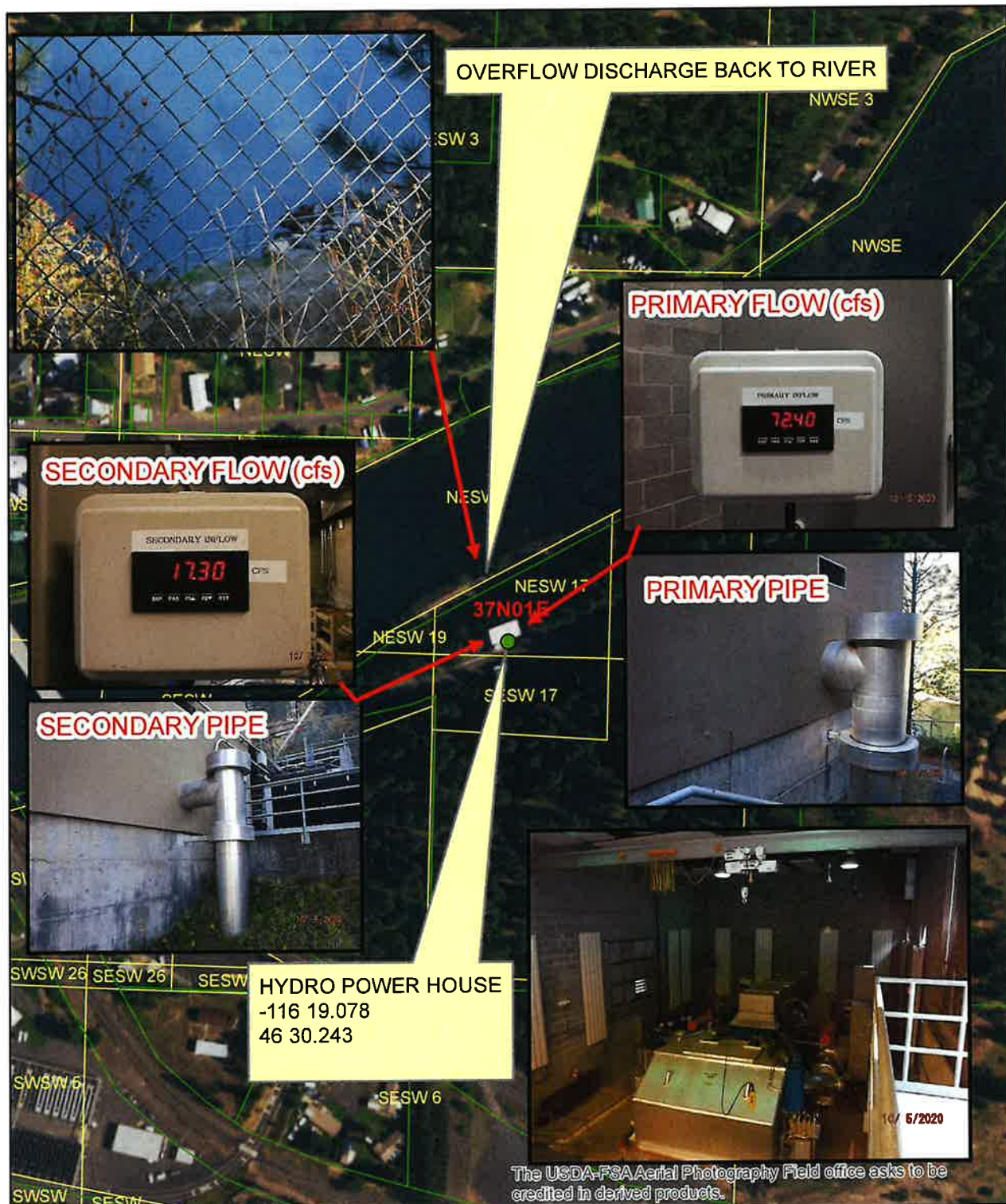
Field Examiners Luke Bates and Adam Frederick Exam Date October 5, 2020

Reviewer Michele D. Edl Report Completed Date 4/9/2021

¹¹ The permit can be seen at <https://www.epa.gov/sites/production/files/2019-10/documents/r10-npdes-idaho-aquaculture-gp-idg131000-idg133000-final-permit-2019.pdf>

CFH is listed in Table 3, page 22 of the associated Fact Sheet at <https://www.epa.gov/sites/production/files/2019-10/documents/r10-npdes-idaho-aquaculture-gp-idg131000-idg133000-fact-sheet-401-cert-2019.pdf>

WR 83-7127					
Table 1: Tally of Fish Propagation Spaces					
count	length (ft)	width(ft)	depth(ft)	volume (cf)	life stage
24	300	10	3	216000	smolts
11	200	10	3	66000	smolts
2	100	10	4	8000	adult holding ponds
60	40	4	3	28800	early rearing
				318,800.00	
40 double stack egg incubation trays (640 trays total) have negligible volume					
Volume Based on Water Changes Per Hour					
maximum flow rate	79.8	cf/sec			
conversion factor	287280	cf/hr			
total volume	318800	cf			
proportion per hour	0.901		Note: less than 1 turnover per hour		
			some spaces idled		
Table 2: Volume Based on 1997 Operation Flows					
		flow rate (cfs) x days x 1.9835 = acre feet			
month	days/month	flow rate cfs	flow rate cfs	flow rate cfs	af/month 1.9835
January	30	70.7	5	75.7	4504.53
February	28	70.7	5	75.7	4204.23
March	31	70.7	5	75.7	4654.68
April	30	70.7	5	75.7	4504.53
May	31	54	5	59	3627.82
June	30	54	7	61	3629.81
July	31	54	9.1	63.1	3879.92
August	31	65	9.1	74.1	4556.30
September	30	70.7	9.1	79.8	4748.50
October	31	70.7	9.1	79.8	4906.78
November	30	70.7	9.1	79.8	4748.50
December	31	70.7	5	75.7	4654.68
total AF					52,620.27 AFA
					52,600.00 AFA rounded
Spreadsheet created by Michele Edl					

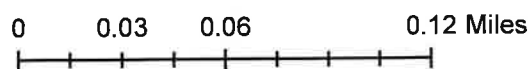
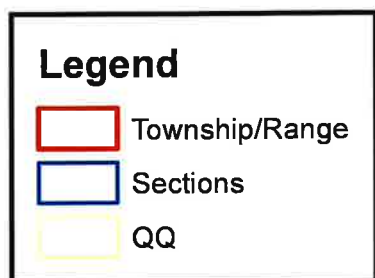
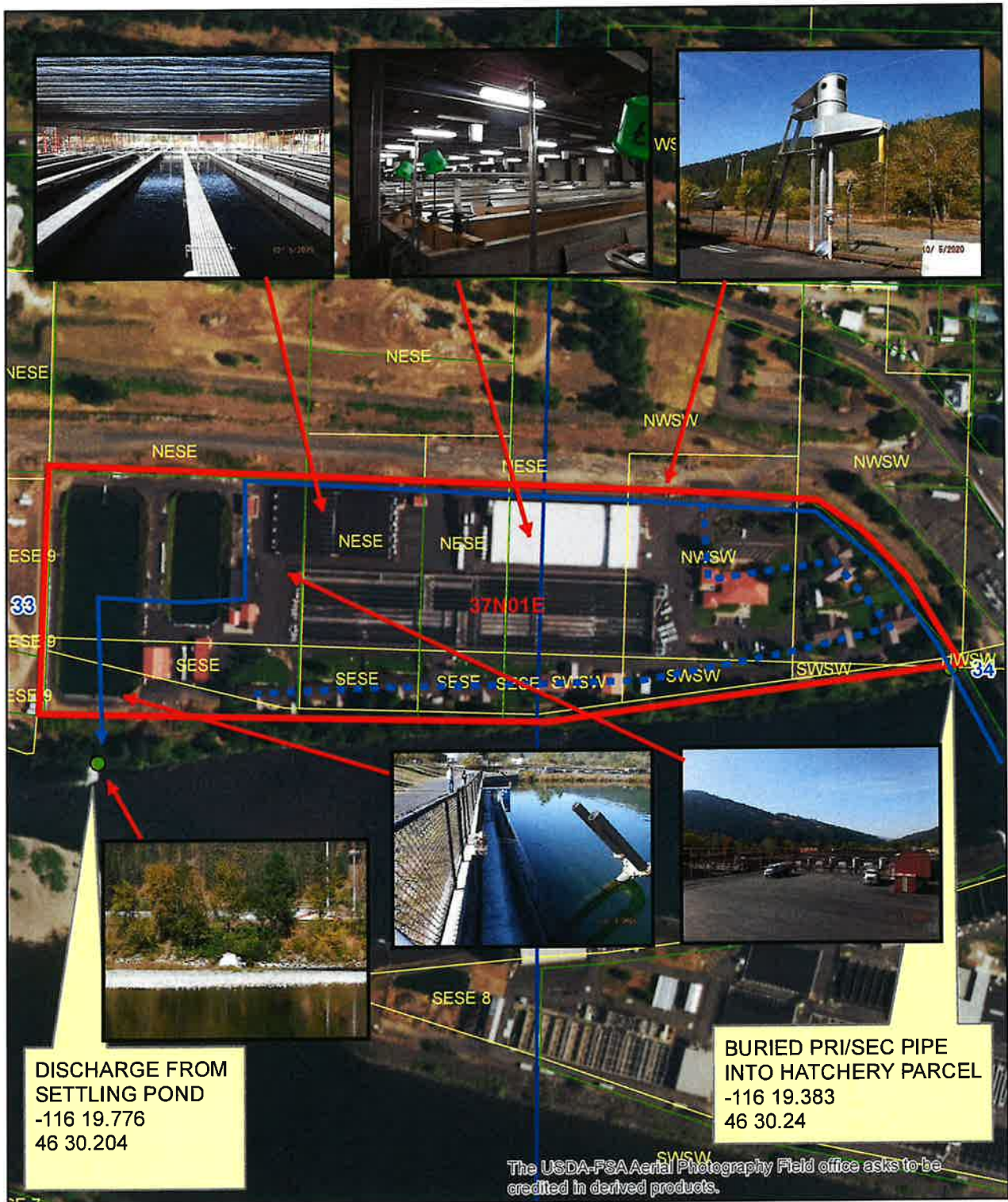


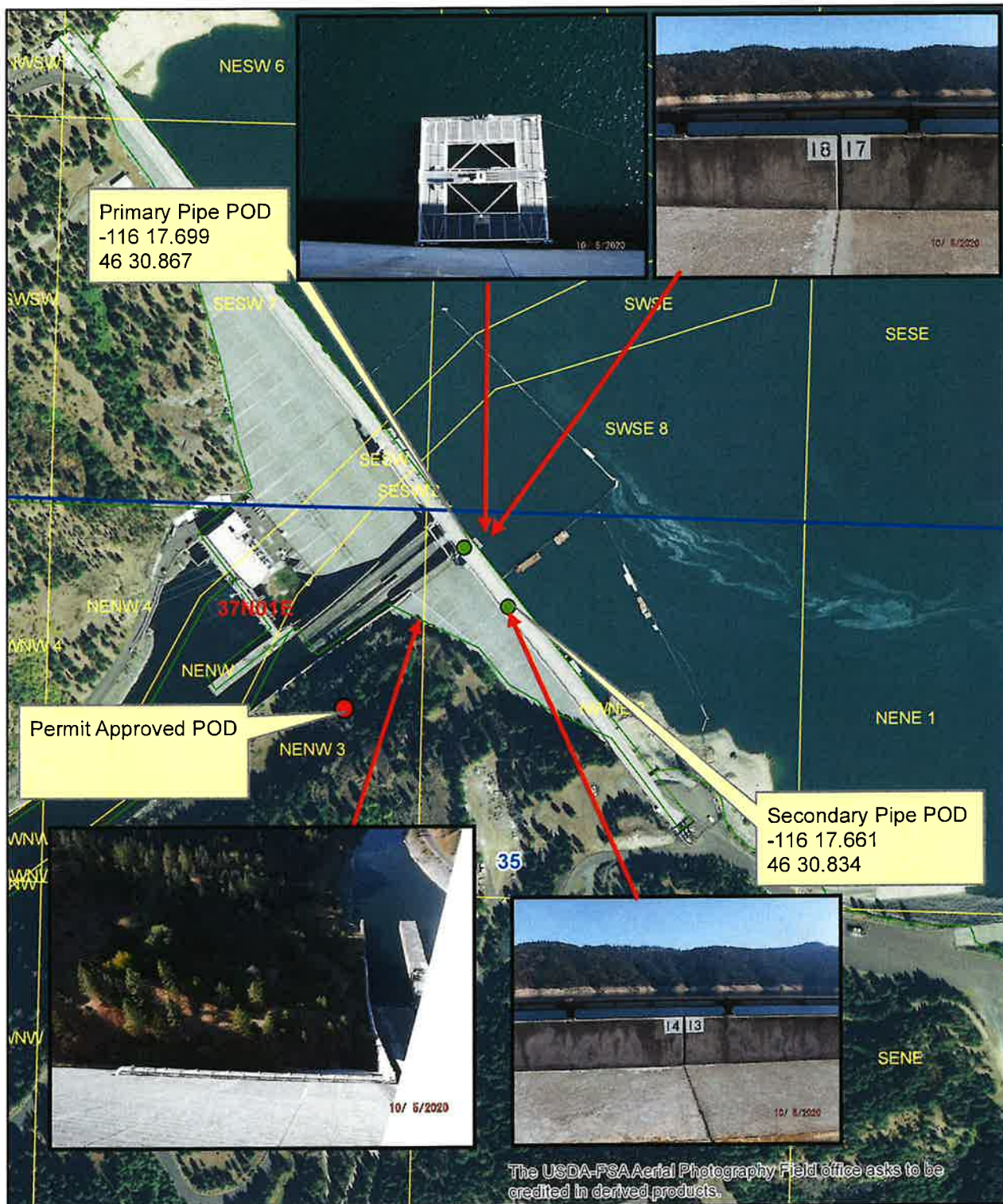
0 0.03 0.06 0.12 Miles

Legend

- Township/Range
- Sections
- QQ







Legend

- Township/Range
- Sections
- QQ

0 0.05 0.1 0.2 Miles





State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

December 5, 2017

US Army Corps of Engineers
Attn: Donna Street, PE, PMP
Chief, Engineering and Construction
201 North Third Avenue
Walla Walla, WA 99362-1876

RE: Dworshak Dam
Storage Authorization

COPY

IDWR File: 83-xx01
NATDAM: ID00287

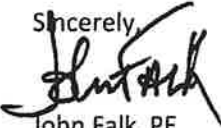
Dear Ms. Street:

The Idaho Department of Water Resources (IDWR) Dam Safety Program participated in the comprehensive inspection of the referenced dam and appurtenant works on June 13th & 14th, 2017. IDWR appreciates the cooperation extended to us by the Walla Walla District, and we will continue to arrange our future inspections on a 5-year frequency to coincide with the Corps' examination schedule. Please notify IDWR Dam Safety in the event this inspection interval is modified. As you are aware, the periodic inspection of existing dams and reservoirs is mandated by Idaho statute to help protect downstream life and property from the consequences of a dam failure and uncontrolled release of water. Regardless the inspecting authority, the dam owner is responsible and potentially liable for any damages resulting from a dam failure.

Based on the results of the dam safety inspection, and in accordance with the terms and conditions included on the enclosed *Certificate of Approval*, the structure is suitable for continued impoundment of water not to exceed the design normal operating pool elevation 1600.0 feet AMSL; thereby reserving thirteen (13) feet freeboard to the crest of the dam, excluding the upstream parapet. Please note that the reservoir must be operated within the limits of valid water right(s) recognized by the State of Idaho, and that the emergency/operation plan must be updated as necessary to accurately reflect names and contact information currently listed for first responders and other emergency organizations.

Impoundment of water is authorized until December 31, 2022. IDWR dam safety personnel will make arrangements with Corps personnel to inspect the dam prior to expiration of the Certificate.

Thank you for your cooperation. If you have any questions, please do not hesitate to call me in Boise at (208) 287-4927 or you may call Joe Carlson in Coeur d'Alene (208) 762-2800.

Sincerely,

John Falk, PE
Dam Safety Manager

Cc: Steve Wyrembelski – USACE Dam Safety Program Manager
Doug Jones – IDWR Northern Region Office Manager
Enc: Certificate of Approval



~ STATE OF IDAHO ~
DEPARTMENT OF WATER RESOURCES

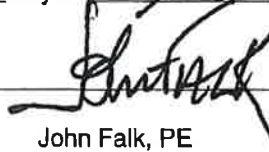
DAM AND RESERVOIR CERTIFICATE OF APPROVAL

This document certifies that:

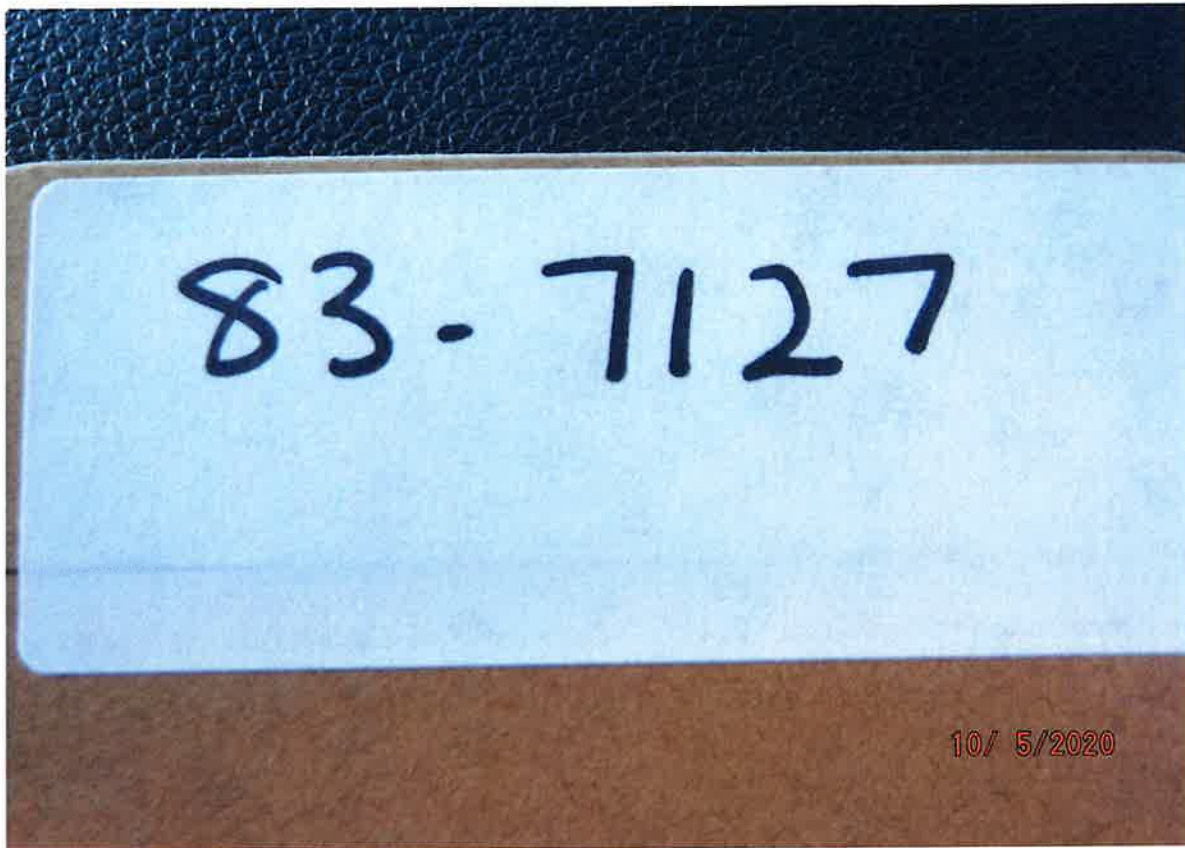
Dworshak Dam located in portions of Sections 26 and 35, T37N, R1E, Clearwater County has been inspected by the Idaho Department of Water Resources Dam Safety Program as provided in Title 42, Chapter 17 Idaho Code, and is hereby approved to impound water not to exceed a reservoir level greater than the design normal pool elevation 1600 feet MSL; however subject to the following terms and conditions:

- This certificate supersedes all previous versions;
- This certificate will expire on **December 31, 2022**;
- Authorized storage is based on the results of periodic inspection, and the continued maintenance, repair and proper operation of the structure by the owner for the protection of public safety;
- This certificate is the property of the State of Idaho and may be revoked at any time upon written notice if the Department determines the structure is unsuitable to impound water, and thus constitutes a danger to life or property downstream;
- Reservoir storage is limited to existing and valid water right(s) as recorded by the Department of Water Resources;
- An Operation/ Emergency Action Plan shall be prepared and updated as necessary to reflect current operating instructions and contact information of first responders and emergency organizations.

Dated this 5th day of December, 2017


John Falk, PE
Dam Safety Program Manager

COPY



CLEARWATER FISH HATCHERY



POD – PRIMARY SUBMERGED PIPE, MOBILE PAD MOVES ALONG DAM FACE





POD – SECONDARY SUBMERGED PIPE FIXED ALONG DAM SURFACE; GPS POINT TAKEN ON TOP OF DAM



PRIMARY AND SECONDARY (FOREGROUND) PIPES – LOCATED INSIDE DAM PIPE ROOM



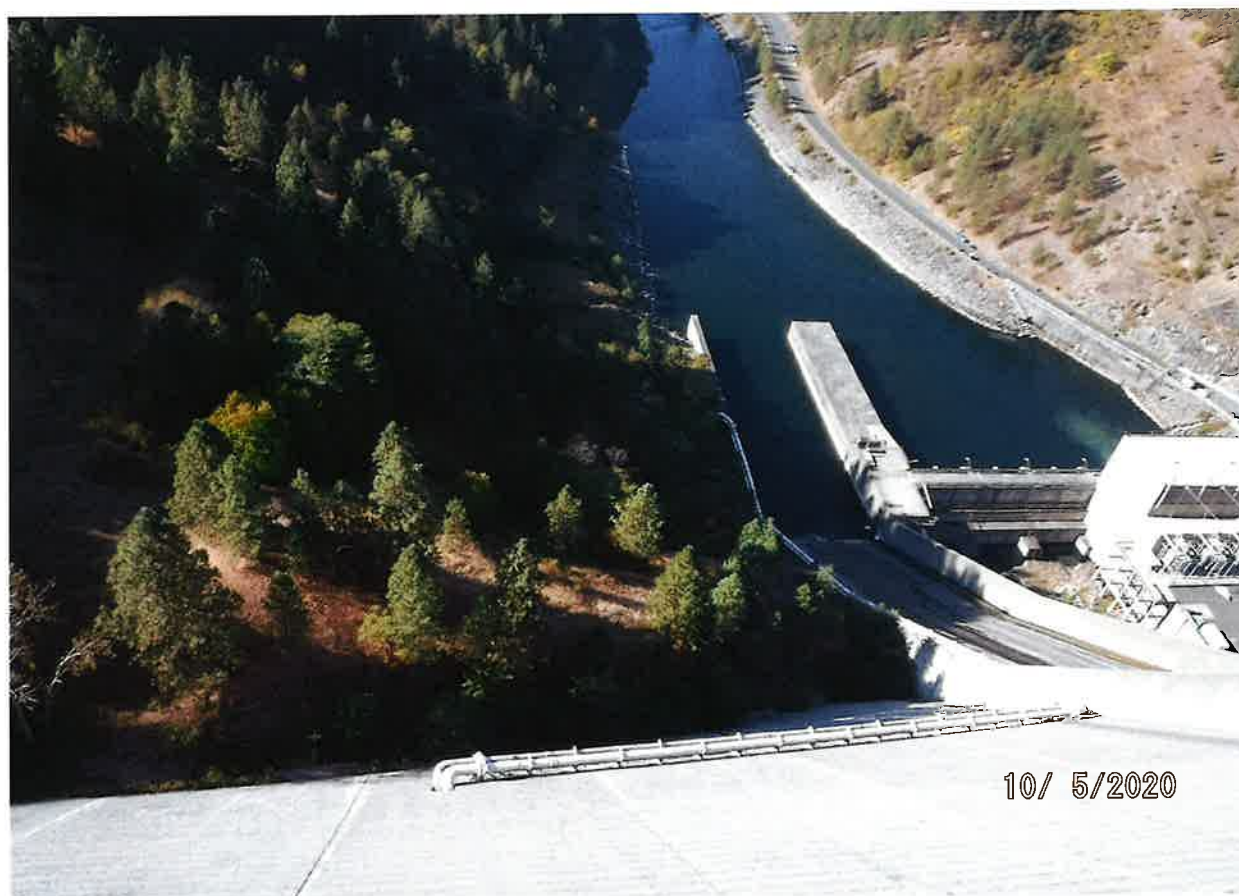
PRIMARY PIPE ULTRASONIC MEASURING DEVICE – INSIDE DAM PIPE ROOM



SECONDARY PIPE ULTRASONIC MEASURING DEVICE – INSIDE DAM PIPE ROOM



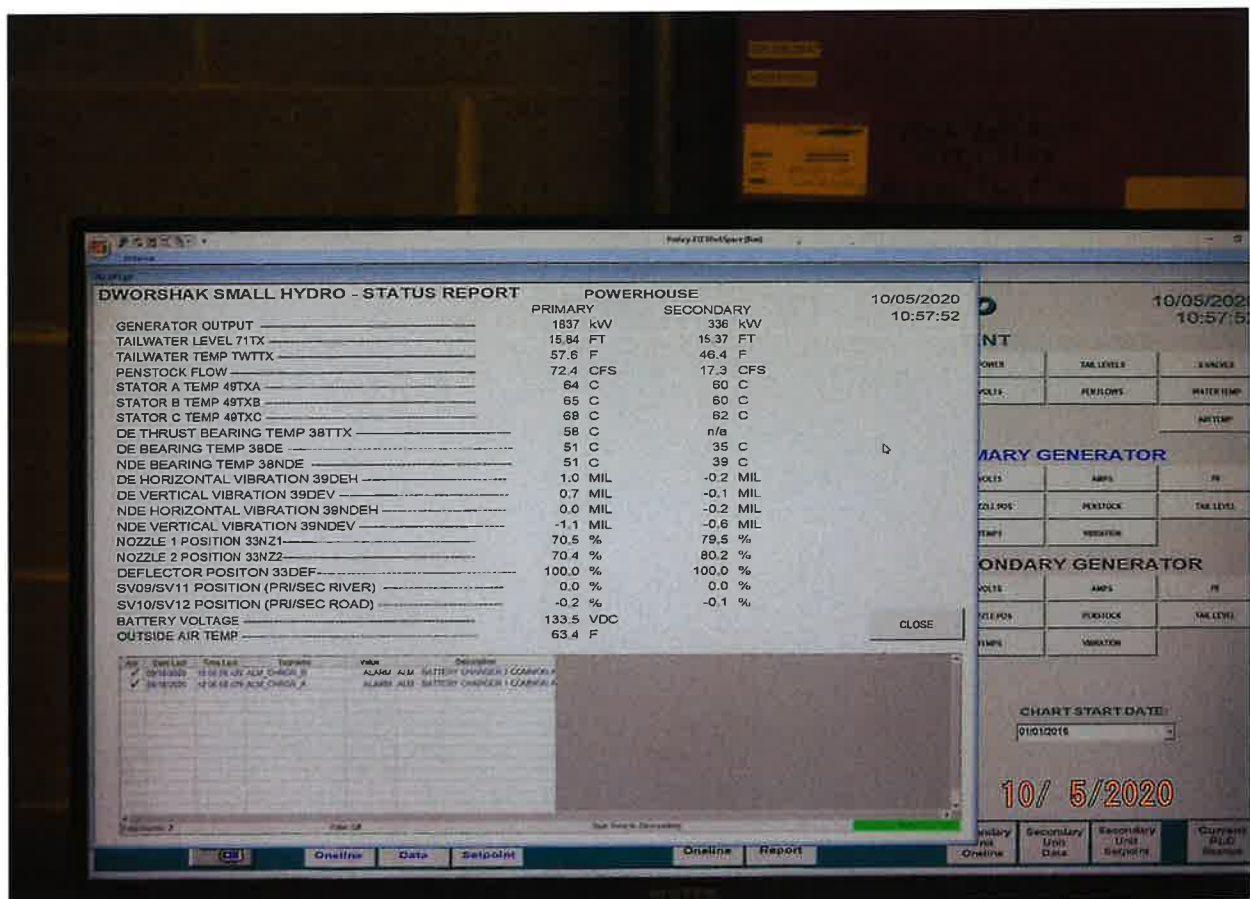
PRIMARY & SECONDARY PIPING EXITING DAM ON DOWNRIVER SIDE



PIPING ROUTES ALONG SPILLWAY BEFORE BEING BURIED UNDERGROUND ALONGSIDE THE RIVER



HYDRO POWER STATION



SYSTEM OPERATING SCADA

Proficy iFIX WorkSpace (Run)

STATUS REPORT		POWERHOUSE	
	PRIMARY		SECONDARY
	1809 kW		336 kW
	15.85 FT		15.38 FT
	57.6 F		46.4 F
	73.0 CFS		16.9 CFS
	64 C		60 C
	65 C		60 C
	68 C		62 C
	58 C		n/a
	51 C		35 C
	51 C		39 C
	1.0 MIL		-0.1 MIL
	0.6 MIL		-0.1 MIL
	0.0 MIL		-0.3 MIL
	-1.1 MIL		-0.8 MIL

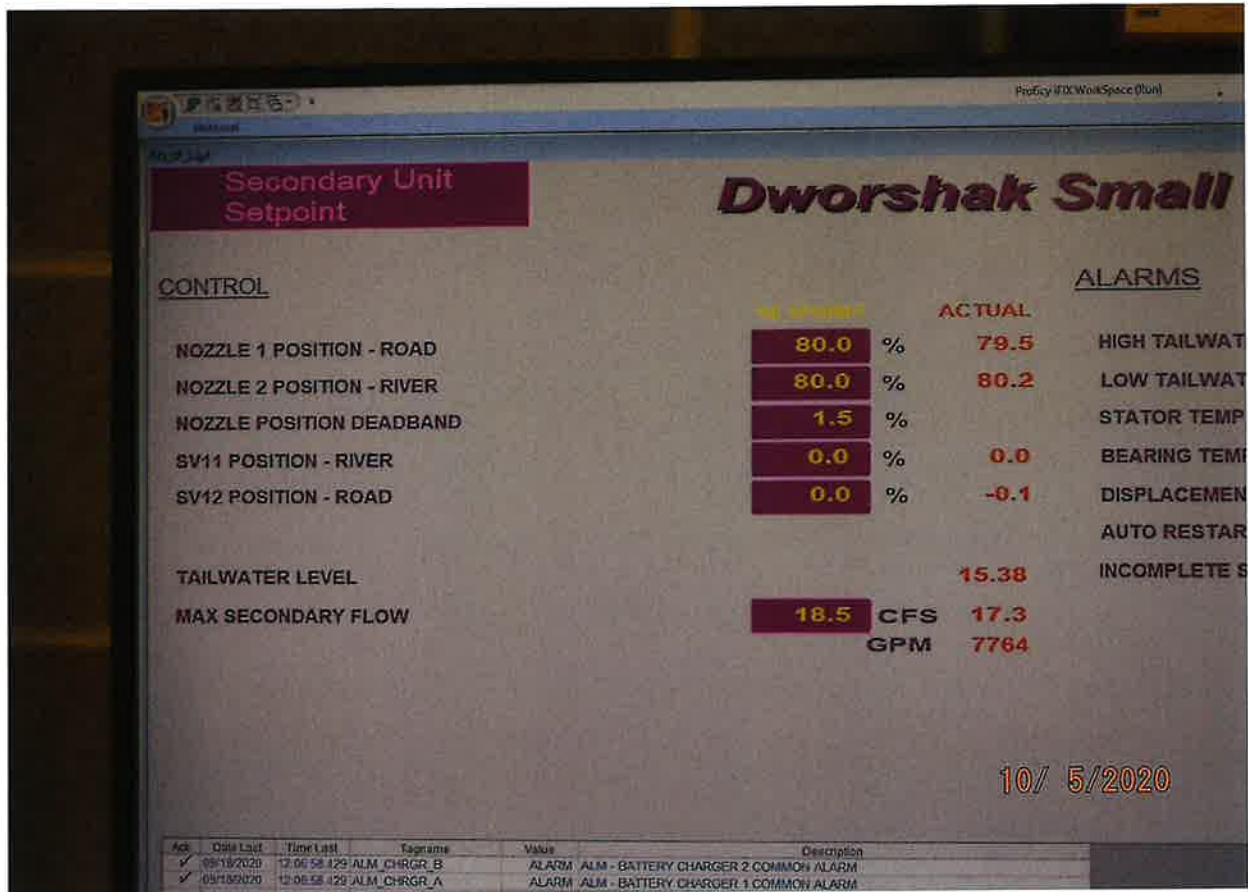
PRIMARY/SECONDARY FLOW RATES

Primary Unit Setpoint		Dworshak Small	
CONTROL		ALARMS	
	SETPOINT	ACTUAL	
NOZZLE 1 POSITION - RIVER	71.0 %	70.3	HIGH TAIL
NOZZLE 2 POSITION - ROAD	71.0 %	70.4	LOW TAIL
NOZZLE POSITION DEADBAND	1.0 %		STATOR
SV09 POSITION - RIVER	0.0 %	0.0	BEARING
SV10 POSITION - ROAD	0.0 %	-0.2	DISPLACE
TAILWATER LEVEL		15.91	AUTO RE
MAX PRIMARY FLOW	80.0 CFS	72.4	INCOMPL
	GPM	32493	

10/ 5/2020

Seq	Date Last	Time Last	Tagname	Value	Description
✓	09/18/2020	12:06:58.429	ALM_CHRG B	ALARM	ALM - BATTERY CHARGER 2 COMMON ALARM
✓	09/18/2020	12:06:58.429	ALM_CHRG A	ALARM	ALM - BATTERY CHARGER 1 COMMON ALARM

PRIMARY UNIT NOZZLE OPEN POSITION



SECONDARY UNIT NOZZLE OPEN POSITION



PRIMARY PIPE DIVERSION RATE (CFS) AT INFLOW TO POWERHOUSE



SECONDARY PIPE DIVERSION RATE (CFS) AT INFLOW TO POWERHOUSE



POWERHOUSE INTERIOR



POWERHOUSE INTERIOR



PRIMARY PIPE INTO POWERHOUSE



PRIMARY PIPE INTERIOR OF POWERHOUSE



SECONDARY PIPE INTO POWERHOUSE



SECONDARY PIPE INTERIOR OF POWERHOUSE



GATE VALVE INSTALLED ON PRIMARY PIPE



GATE VALVE INSTALLED ON SECONDARY PIPE



PRIMARY PAN SLEEVE VALVE FOR MANUAL OPERATION



SECONDARY PAN SLEEVE VALVE FOR MANUAL OPERATION



PRIMARY MIXING TANK



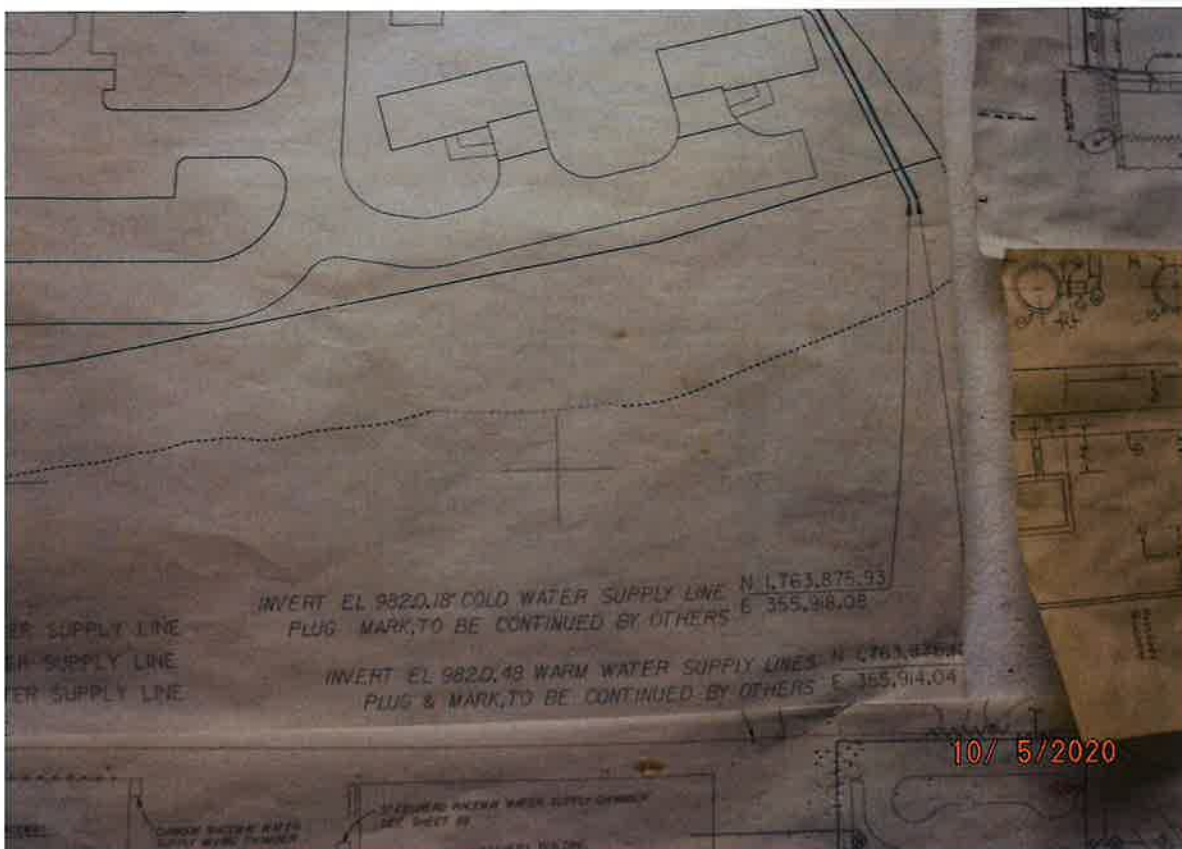
PRIMARY/SECONDARY TANK LEVEL PANELS



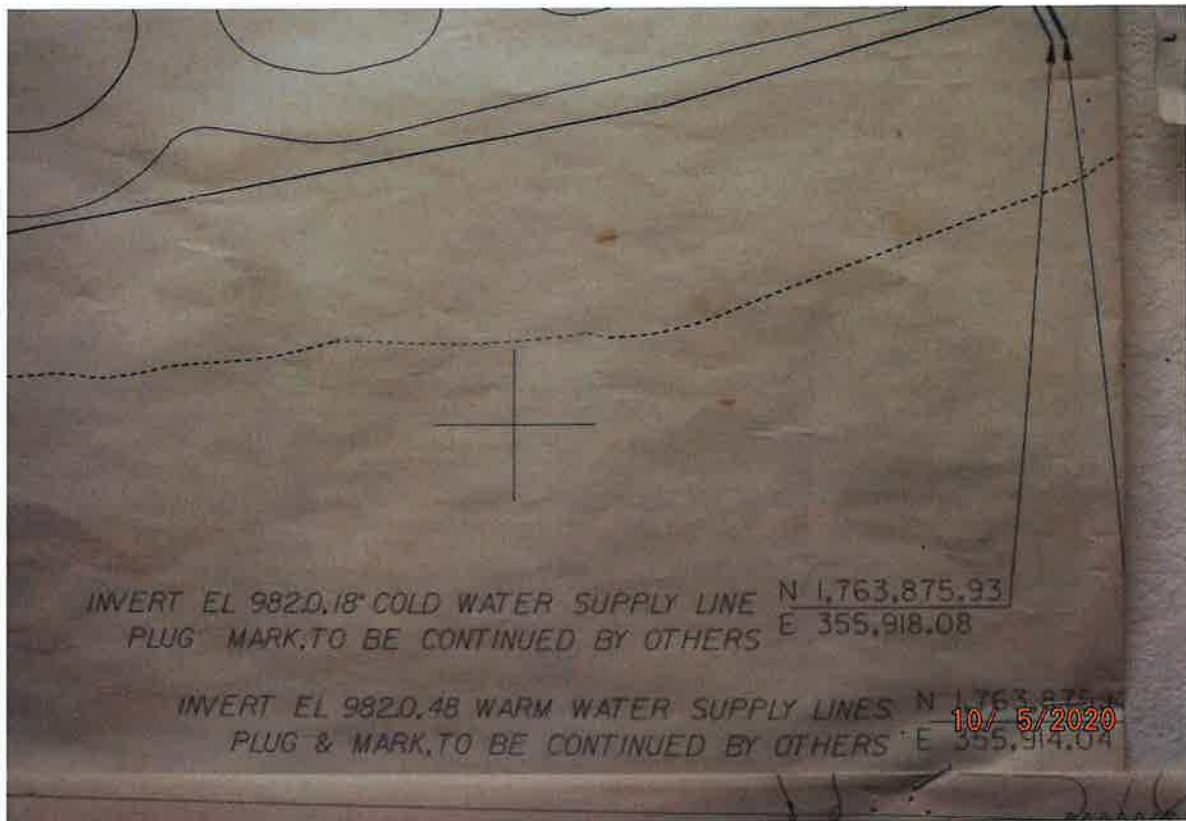
POWERHOUSE ELECTRIC CONTROL PANEL



OVERFLOW DISCHARGE FROM POWERHOUSE TO RIVER



WATER LINE SCHEMATIC: PIPE LINE ELEVATION 982.0, 18 INCH COLD WATER SUPPLY LINE



WATER LINE SCHEMATIC: PIPE LINE ELEVATION 982.02, 48 INCH WARM WATER SUPPLY LINE



FISH PROPAGATION POU - TRUCK FILLING STATION



FISH PROPAGATION POU – FISH RUNS



FISH PROPAGATION – HATCHERY OVERVIEW



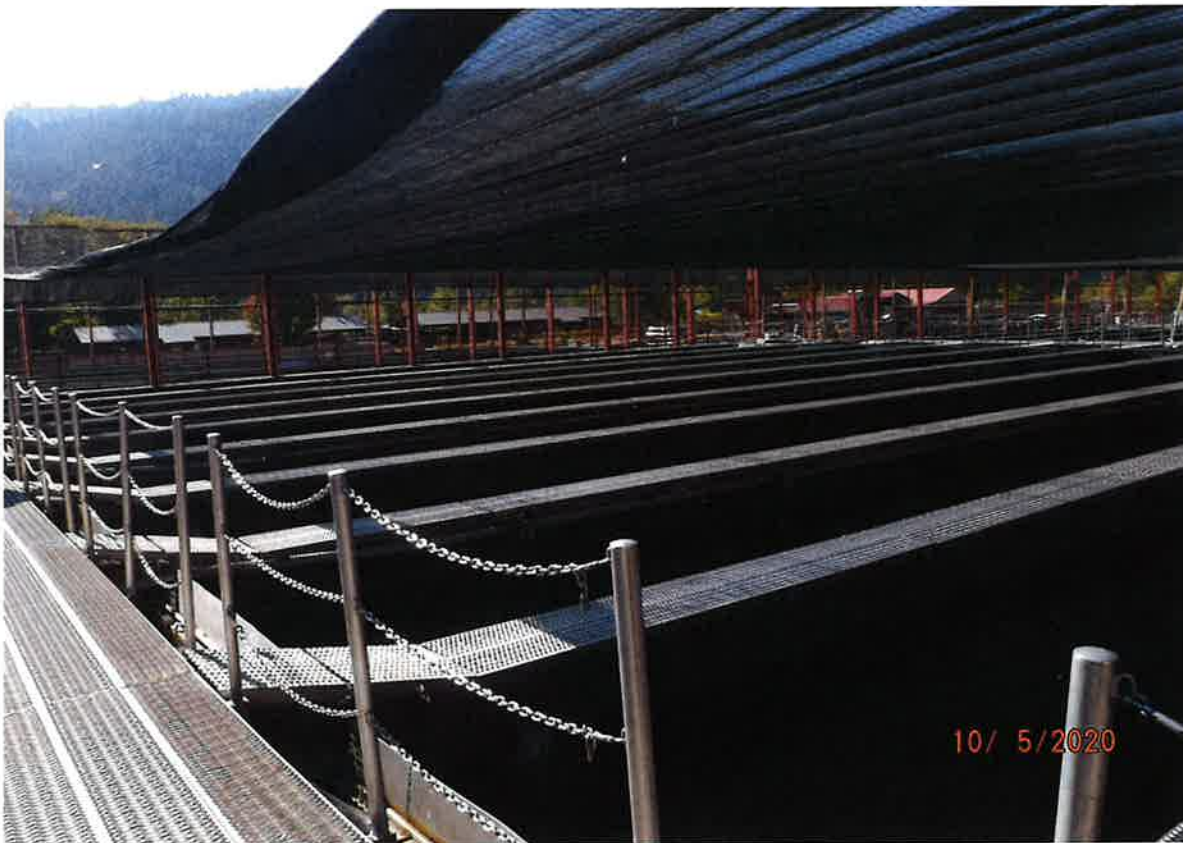
PRIMARY AND SECONDARY CONTROL VALVES (EXAMPLE)



FISH PROPAGATION POU – WATER CONTROL TOWER



FISH PROPAGATION POU – DEGASSING TOWERS



FISH PROPAGATION POU – FISH RACEWAYS



FISH PROPAGATION POU – FISH RACEWAYS



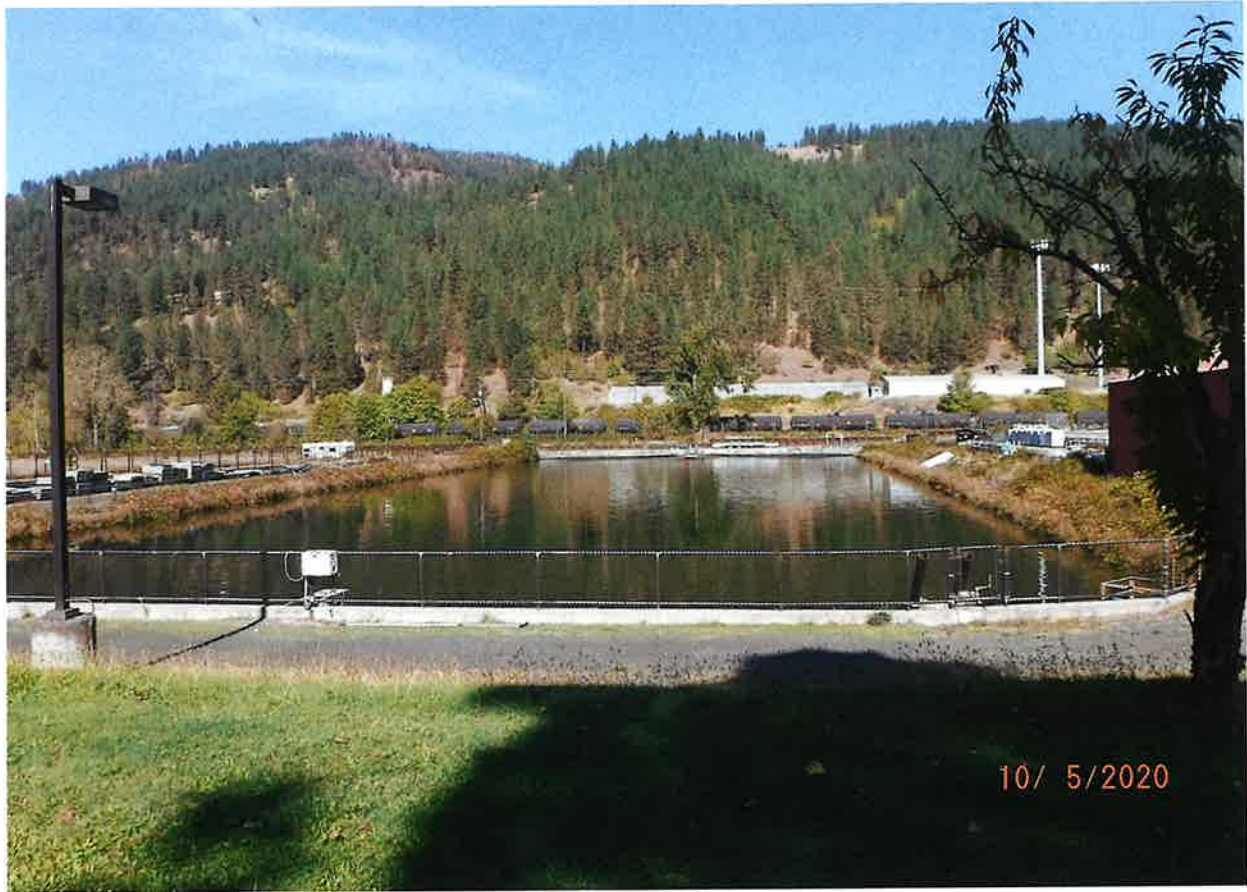
FISH PROPAGATION POU – FISH RACEWAYS



FISH PROPAGATION POU – FISH RACEWAYS



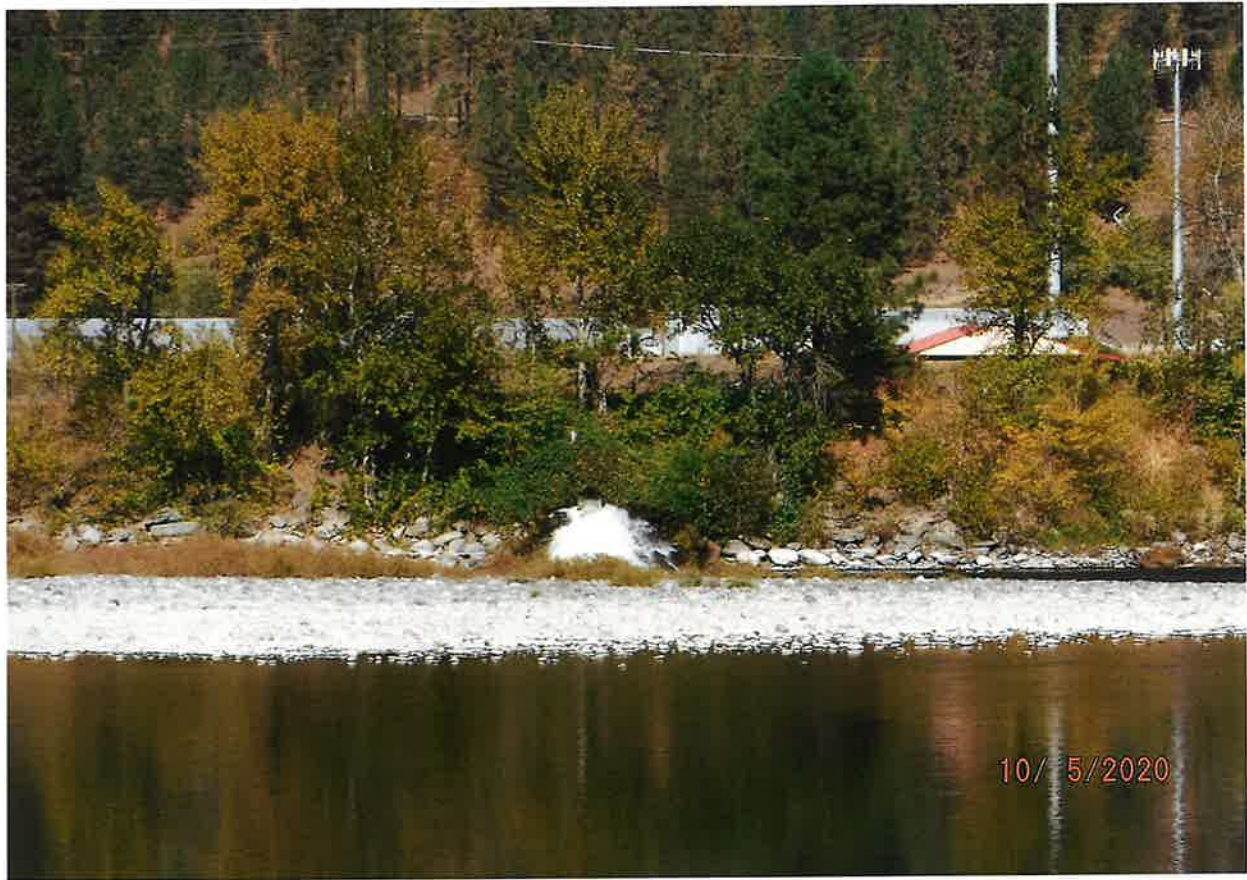
FISH PROPOGATION POU – SETTLING "MUD" POND 1 OF 2



FISH PROPOGATION POU – SETTLING POND 2 OF 2



FISH PROPOGATION POU – METERED WEIR FROM SETTLING POND 2 OF 2 BEFORE DISCHARGE TO RIVER



SINGLE POINT CULVERT FOR FISH HATCHERY DISCHARGE BACK TO RIVER



FISH HATCHERY TRANSPORT TRUCK

83-7127

Attachment #1 to Beneficial Use Field Report

Select engineering drawings and map of the water path



BLUE = WATER LINE 2 EACH (PRIMARY/SECONDARY) PIPES FROM DAM INTAKE – TO HYDRO POWER STATION – TO FISH HATCHERY – TO DISCHARGE BACK TO RIVER.

RED BOXES = FISH HATCHERY POU & HYDRO POWER STATION

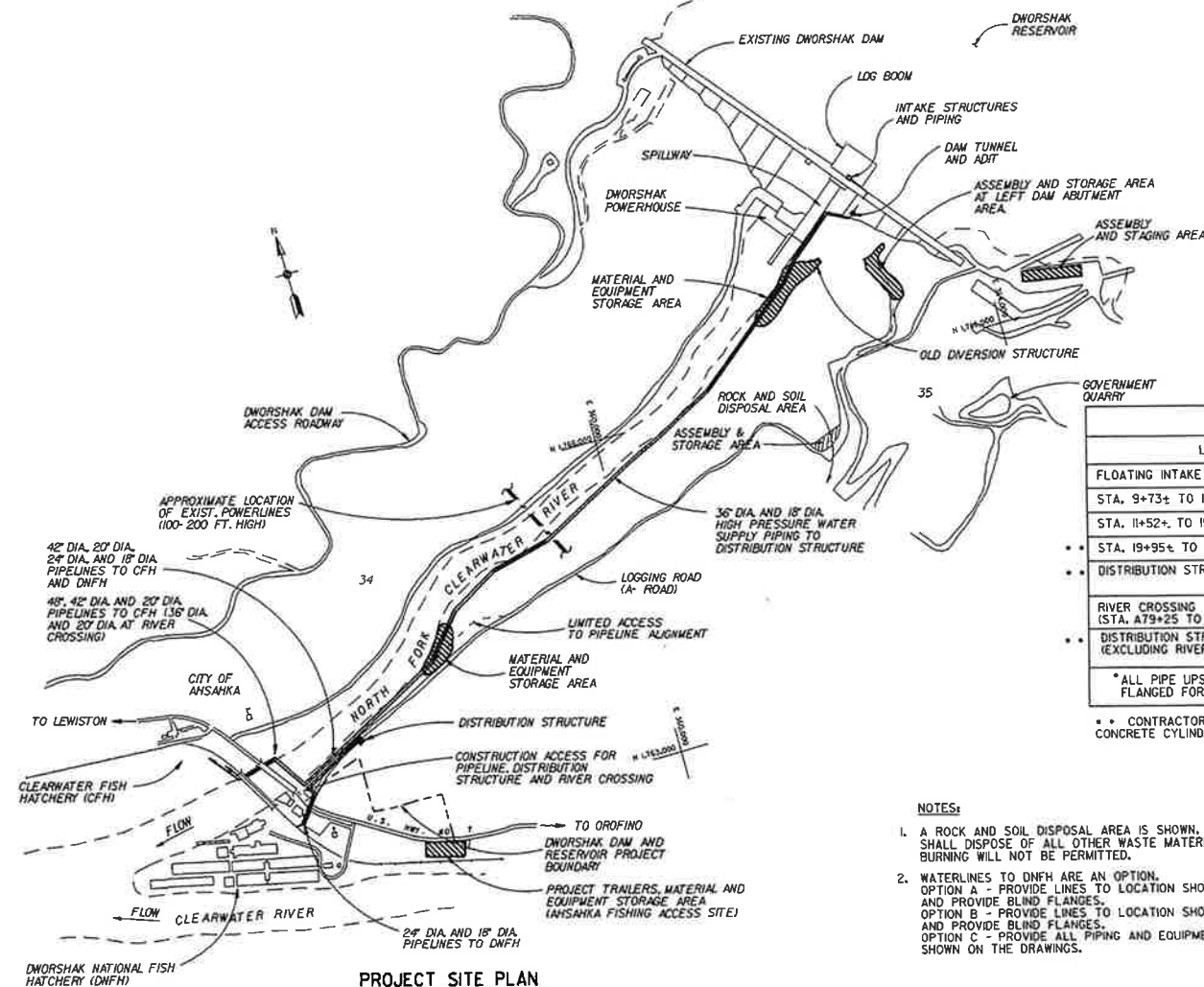
PURPLE LINE = 2EA WATER LINES (PRIMARY/SECONDARY) PIPES FROM HYDRO POWER STATION – TO FEDERAL HATCHERY.

LIGHT BLUE LINE = OVERFLOW DISCHARGE FROM POWER STATION BACK TO RIVER

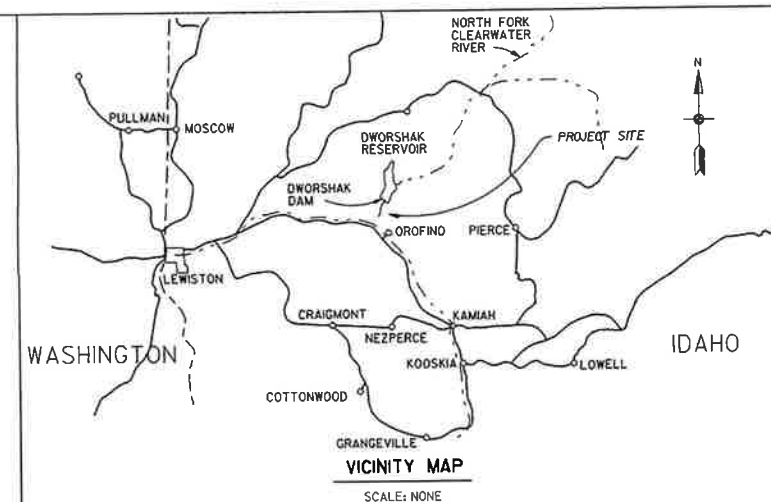
LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN CLEARWATER FISH HATCHERY WATER SUPPLY



LOCATION MAP
SCALE: NONE



PROJECT SITE PLAN
SCALE: 1" = 600'



VICINITY MAP
SCALE: NONE

TRANSMISSION PIPELINE SCHEDULE					
LOCATION	DIAMETER (INCHES)	MATERIAL TYPE	SPEC. SECTION	JOINT TYPE*	PRESSURE CLASS
FLOATING INTAKE TO DAM STRUCTURE	48	HIGH DENSITY POLYETHYLENE	2L	FUSION WELDED	SOR-26
STA. 9+73± TO 11+52± (INSIDE DAM)	14, 24	EPOXY LINED AND PAINTED STEEL PIPE	2N	SEE DRAWINGS	SCHED. XS
STA. 11+52± TO 19+95±	18, 36	MORTAR LINED AND PAINTED STEEL PIPE	2M	WELDED OR FLANGED	300
STA. 19+95± TO DISTRIBUTION STRUCTURE	18, 36	PRETENSIONED CONCRETE CYLINDER PIPE	2J-A	WELDED OR FLANGED	300
DISTRIBUTION STRUCTURE TO DNPH	18, 24	PRETENSIONED CONCRETE CYLINDER PIPE AMERON	2J-A	SEE DRAWINGS	100
RIVER CROSSING (STA. A79+25 TO A82+86)	20, 36	PRETENSIONED CONCRETE CYLINDER PIPE AMERON	2J-B	SEE SPECS	SEE SPECS
DISTRIBUTION STRUCTURE TO CFH (EXCLUDING RIVER CROSSING)	20, 42, 48	PRETENSIONED CONCRETE CYLINDER PIPE AMERON	2J-A	SEE DRAWINGS	100

* ALL PIPE UPSTREAM OF STA. A73+50 TO 11+52 (INSIDE DAM) SHALL BE WELDED OR FLANGED FOR THRUST RESTRAINT UNLESS INDICATED OTHERWISE.

** CONTRACTOR MAY USE PRETENSIONED CONCRETE CYLINDER PIPE. SEE SPECIFICATIONS.

NOTES:

- A ROCK AND SOIL DISPOSAL AREA IS SHOWN. THE CONTRACTOR SHALL DISPOSE OF ALL OTHER WASTE MATERIAL OFFSITE. BURNING WILL NOT BE PERMITTED.
- WATERLINES TO DNPH ARE AN OPTION. OPTION A - PROVIDE LINES TO LOCATION SHOWN ON SHEET 44 AND PROVIDE BLIND FLANGES. OPTION B - PROVIDE LINES TO LOCATION SHOWN ON SHEET 22 AND PROVIDE BLIND FLANGES. OPTION C - PROVIDE ALL PIPING AND EQUIPMENT TO DNPH AS SHOWN ON THE DRAWINGS.



C	95 MAY	AS CONSTRUCTED	30 MAY 95
B	RELOCATED PRIMARY INTAKE STRUCTURE		
A	REVISED NOTES AND SCHEDULE ADDED STORAGE AREA		
REVISION	DATE	DESCRIPTION	DATE
1	30 MAY 95	U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON	
LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN CLEARWATER FISH HATCHERY, IDAHO HATCHERY WATER SUPPLY LOCATION MAP, VICINITY MAP AND PROJECT SITE PLAN			
SCALE AS SHOWN		INV. NO. 90-B-32	FILE NO.
SHEET NO. 2		LSG-1-0-1/194	

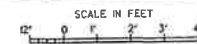
VALUE ENGINEERING PAYS

CONT. NO. 90-C-0030

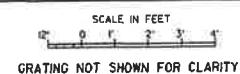
REFERENCE FILES ATTACHED

LEVELS ON FOR CONTRACT DRWG

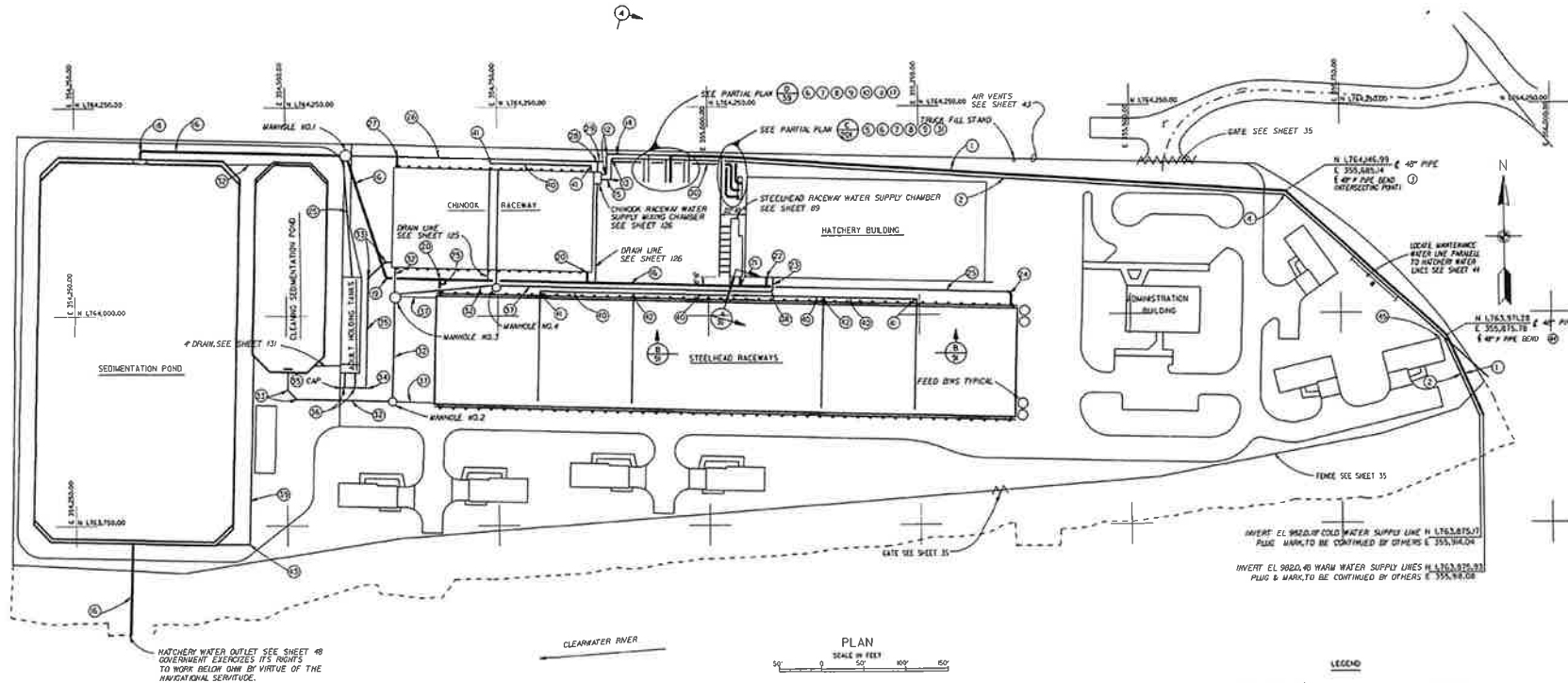
SCALE
1" = 40'-0"U:\S\5\005\005\005\005.dgn
6-MAY-1996 11:15



- GENERAL NOTES:
1. PIPE SHALL HAVE GROOVED TYPE COUPLINGS (TYP), EXCEPT WHERE WELDED FLANGES AND/OR WELDED PIPE IS SHOWN.
 2. FOR VALVE SCHEDULE, SEE SHT. 8I.
 3. NOT SHOWN AT STA. 10+55.00 EXISTING UPLIFT PRESSURE PIPE ON WALL AT 10+54.00 COORDINATE 10+67+00.00. CONTRACTOR SHALL RELOCATE AS NECESSARY TO MAINTAIN SERVICEABILITY AFTER PIPELINE CONSTRUCTION.
 4. WATERTIGHT DOOR SHALL BE INSTALLED PRIOR TO ANY DRILLING OPERATIONS.
 5. ALL EXISTING FOUNDATION DRAINS (3/2" DIA. W/CAPS) IN GUTTER SHALL REMAIN UNDISTURBED.



C	95 MAY	AS CONSTRUCTED	2224
B	5MAR92 ADDED COUPLING AT VI		
A	ZIFB32 VI: REPLACE PLUG VALVE WITH KNIFE GATE VALVE		
REVISION	DATE	DESCRIPTION	CHG. AUTH.
	001	JOHN M. Montgomery Consulting Engineers, Inc.	
		U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON	
G. CARROLL		LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN CLEARWATER FISH HATCHERY, IDAHO HATCHERY WATER SUPPLY GALLERY MECHANICAL PLAN AND SECTIONS	
DESIGNED BY			
L. HAYS			
CHECKED BY			
CLARK BY CLARK			
DESIGNED BY			
SUPERVISOR			
SUBMITTER			DATE 30-JUL-95
		APPROVER	
		SCALE AS SHOWN	INV. NO. 90-B-32
REVISIONS		SHEET NO.	FILE NO.
		75	1 SH-1-3-29/49



LIST OF MATERIALS

PART NO.	EST. QTY.	DESCRIPTION	SPECIFICATIONS	REMARKS	PART NO.	EST. QTY.	DESCRIPTION	SPECIFICATIONS	REMARKS	PART NO.	EST. QTY.	DESCRIPTION	SPECIFICATIONS	REMARKS
1	1300	48" SUPPLY PIPE WARM WATER	REINFORCED CONCRETE ASTM C-381		8	1	48"-90" ELBOW	REINFORCED ASTH CONCRETE C-76		35	200	24" SUPPLY PIPE	PVC	SDR-35
2	1000	18" SUPPLY PIPE COLD WATER	REINFORCED CONCRETE C-381		9	1	49"-69" 30' ELBOW	REINFORCED ASTH CONCRETE C-76		36	2	40" LATERAL ON (25)	PVC	SDR-35
3	1	48" ELBOW, 38.900" SUPPLY	REINFORCED CONCRETE C-381		10	2	30" LATERAL ON (15)	REINFORCED ASTH CONCRETE C-76		37	120	18" DRAIN PIPE	PVC	SDR-35
4	1	18" ELBOW, 38.900" SUPPLY	REINFORCED CONCRETE C-381		11	1	50" LATERAL ON (6)	REINFORCED ASTH CONCRETE C-76		38	1	18"-90" ELBOW	PVC	SDR-35
5	1	10" LATERAL ON (1)	REINFORCED CONCRETE C-381	SEE SHEET 20	22	1	24" LATERAL ON (6)	PVC SDR-35		39	230	8" DRAIN PIPE, SDR 35	PVC	ASTM B3024
6	2	10" LATERAL ON (2)	REINFORCED CONCRETE C-381	SEE SHEET 20	23	1	49" TO 30" REDUCER (6) TO (25)	REINFORCED ASTH CONCRETE C-76		40	510	18" SUPPLY PIPE	REINFORCED CONCRETE	DOES NOT BELONG UNDER THIS SHEET
7	3	10" LATERAL ON (2)	REINFORCED CONCRETE C-381	SEE SHEETS 39 & 20	24	1	30"-90" ELBOW	REINFORCED ASTH CONCRETE C-76		41	4	18"-90" ELBOW	REINFORCED CONCRETE	1000
8	2	24" LATERAL ON (1)	REINFORCED CONCRETE C-381	SEE SHEETS 39 & 20	25	430	30" DRAIN PIPE	REINFORCED ASTH CONCRETE C-76		42	2	8" TEE ON (40)	REINFORCED CONCRETE	1000
9	2	48" x 40" TEE ON (1)	REINFORCED CONCRETE C-381	SEE SHEET 39 & 20	26	1	30" DRAIN PIPE	REINFORCED ASTH CONCRETE C-76		43	2	8" TEE ON (40)	REINFORCED CONCRETE	1000
10	1	49" TO 21" REDUCER (1) TO (15)	REINFORCED CONCRETE C-381	SEE SHEET 39	27	1	30" LATERAL ON (25)	REINFORCED ASTH CONCRETE C-76		44	1	8"-90" ELBOW TO SURT (25)	PVC	ASTM D3024
11	1	18" TO 18" REDUCER (2) TO (15)	REINFORCED CONCRETE C-381	SEE SHEET 39	28	1	21" LATERAL ON (25)	REINFORCED ASTH CONCRETE C-76		45	1	48" ELBOW, 23.08" SUPPLY	REINFORCED CONCRETE C-76	1000
12	2	27"-90" ELBOW	REINFORCED CONCRETE C-381		29	3	36" TO 21" REDUCER (25) TO (25)	REINFORCED ASTH CONCRETE C-76		46	1	8" ELBOW, 23.08" SUPPLY	REINFORCED CONCRETE	1000
13	1	4"-90" ELBOW	REINFORCED CONCRETE C-381		30	20	21" DRAIN PIPE	REINFORCED ASTH CONCRETE C-76						
14	10	18" SUPPLY PIPE	REINFORCED CONCRETE C-381		31	2	21"-90" ELBOW	REINFORCED ASTH CONCRETE C-76						
15	30	18" SUPPLY PIPE	REINFORCED CONCRETE C-381		32	500	24" DRAIN PIPE	PVC SDR-35						
16	150	48" DRAIN PIPE	REINFORCED CONCRETE C-76		33	4	24"-65" ELBOW	PVC SDR-35						
17	1	10" LATERAL ON (15)	REINFORCED CONCRETE C-381	SEE SHEET 39	34	1	24"-90" ELBOW	PVC SDR-35						

- LEGEND**
- ✕-✕-✕ 6\"/>

- NOTES:**
1. FOR MANHOLE DETAILS SEE SHEET 42.
 2. FOR PIPE PROFILE SEE SHEETS 40 AND 41.

B 35 APR 1955		AS CONSTRUCTED	
U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN CLEARWATER FISH HATCHERY, 3-29-41			
HATCHERY WATER, PIPING PLAN			
DESIGNED BY J. H. BROWN		CHECKED BY J. H. BROWN	
DRAWN BY J. H. BROWN		SCALE AS SHOWN (INV. NO. 89-3-24)	
DATE 3-29-41		38 LSH-1-3-29/41	

VALUE ENGINEERING PAYS

CONT. NO. 89-C-40

YES L300.61 CFSH1E.20
L300.637FLBLK

5

100

Rev 3/28/41 to 3/28/41
4-40-41 8-22-41

83-7127

Attachment #2 to Beneficial Use Field Report

Results of Pipe Capacity Tests



Primary

Secondary

MAX

20.7 =

21.2 cfs =

 $V_{max} = 12 \text{ fps}$

Design

62.7 cfs =

17.4 cfs =

65 cfs =

6.5 cfs =

18 cfs

FAX

CLEARWATER FISH HATCHERY
118 HATCHERY ROE DR
AHSAHKA, ID 83520

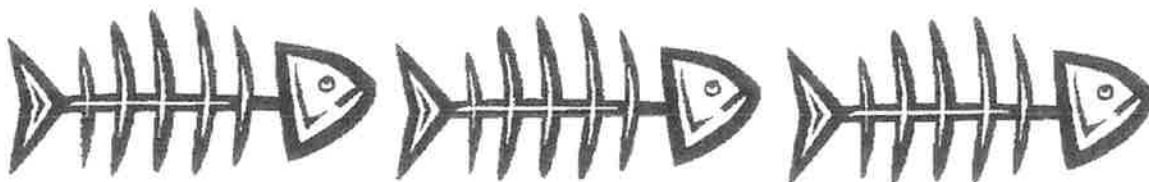
For - Brian MillerFax number - 509-527-7807From - Jerry McGehee

Fax number - _____

Date - 2/7/2011Number of pages - 13 including cover

Comments - _____

Regarding - _____





DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON 99362-9265

October 5, 1994

REPLY TO
ATTENTION OF:

Programs and Project
Management Division

Mr. Tom Rogers, Supervisor
Anadromous Hatcheries
Idaho Department of Fish and Game
600 South Walnut Street
P.O. Box 25
Boise, Idaho 83707

Dear Mr. Rogers:

In April 1993, the Corps of Engineers (Corps) received a request from the Clearwater Hatchery (CWH) personnel to determine actual water flows from the primary and secondary waterlines of the Clearwater Hatchery Water Supply Line. The Corps purchased state-of-the-art ultrasonic transit flow meters and from May 1994 through August 1994 performed flow measurement tests. The enclosure provides details of our testing with both measured and calculated capacities at various pool elevations. Flows were measured from Dworshak Dam to the distribution structure and from the distribution structure to CWH. In summary, we offer the following.

a. Available water supply from the distribution structure to the CWH exceeds both required and designed capacities. On the primary line, the maximum capacity available to CWH is 70.7 cfs. On the secondary line, the maximum capacity available to CWH is 9.1 cfs. The required capacities of 62.7 cfs from the primary line and 6.5 cfs from the secondary line were specified in the Clearwater Hatchery and Clearwater Water Supply Design Memorandums (DM 17 and Supplement 1).

b. These capacities are available at minimum operating forebay elevations in the Dworshak Reservoir.

c. The available water supply exceeds quantities requested by the Idaho Department of Fish and Game when criteria were established in June 1983 (see enclosure 2). Changing the water source has not impacted flow recommendations as set forth in the CWH criteria. Reference enclosure 3. This is the actual water schedule that was defined in the Supplement to DM 17 for the Clearwater Water Supply Waterline.

d. The valve on the primary line at the distribution structure must not be operated above a 75 percent opening. The Corps highly recommends that the CWH staff

427-7991 c. h. mellen

AR

-2-

become familiar with the data from these tests and this information becomes part of the CWH O&M Manual.

This concludes our flow testing. The recommendations with regards to the limit switch and the manual override switch will be installed by the Corps.

Please call me if you have any questions or concerns at 509-522-6797.

Sincerely,



David B. Hull
Project Manager, Lower Snake River
Fish and Wildlife Compensation Plan

Enclosures

CF:

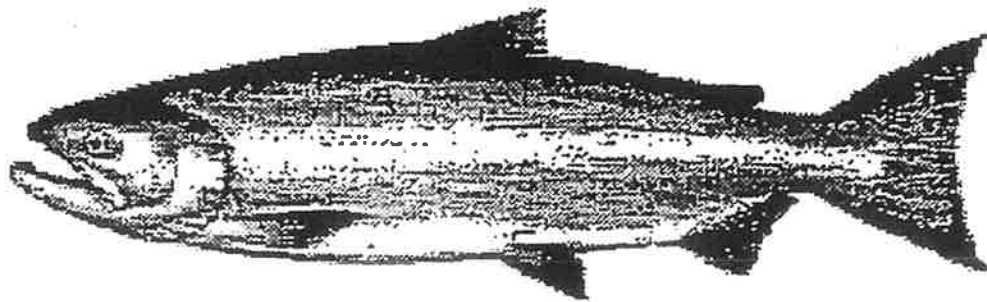
Ed Crateau, LSRCP Manager
U.S. Fish and Wildlife Service
4696 Overland Road, Room 560
Boise, Idaho 83705

Phil Jepson, Chief
Bureau of Engineering
Idaho Dept of Fish and Game
600 South Walnut Street
P.O. Box 25
Boise, Idaho 83707

Jerry McGehee, Manager
Clearwater Fish Hatchery
Idaho Dept of Fish and Game
4156 Ahsahka Road
Ahsahka, Idaho 83520

IDAHO DEPARTMENT OF FISH AND GAME

FISH FAX



CLEARWATER FISH HATCHERY

AHSAHKA, IDAHO 83520

TELEPHONE: (208) 476-3331

FAX: (208) 476-3548

DATE: 10/29/97 **TIME:** _____ **PAGES:** _____

FROM: Jerry M. Baker

TO: Ralph Miller

TELE. NO. OF PERSON: _____ **FAX NO:** (208) 327-7866

MESSAGE: _____

September 29, 1994

SUMMARY REPORT

CLEARWATER WATER SUPPLY FLOW TESTING

U.S. Army Corp Waila Waila

Engineering Division was tasked to measure actual water flows in the primary and secondary water supply lines to Clearwater Fish Hatchery. Three trips to the hatchery were completed during the spring and summer of 1994 to conduct flow measurements and validate data. Results show that **water flow into the hatchery exceeds the design capacity.**

The **capacity** of the primary and secondary lines from the distribution box to the Hatchery were determined from documentation found in the Clearwater Fish Hatchery Design Memorandum 17 and Supplement 1. Flows in both lines were measured with valves in the hatchery completely open. The measured capacity exceeded the required water supplied. Required flows are compared to measured flows in the table below:

WATER FLOW CAPACITY
from Distribution Structure to Clearwater Hatchery

	Required Capacity (cfs)	Measured Capacity (cfs)
Primary Line	62.7	70.7
Secondary Line	6.5	9.1

To determine if the Required Capacity of water could be supplied to the distribution box from the dam, measurements on these lines were taken at pool elevations as high and low as conditions would permit. Measured flows were compared to calculated flows and found to be consistent. Flow measurements and calculations for both lines into the distribution box show the system can provide the design water requirements to the distribution box at any expected operating pool level. (Tables 1 & 2)

From the beginning of this water supply project, a vibration has been noticed in the primary supply valves at the distribution structure. This **valve vibration** was also measured at the various pool elevations. Findings show that the vibration is generally consistent within the 80 - 90% valve opening range. Flow measurements show that the valves do not need to be operated above 70 - 75 % to provide required flow. Hatchery personnel are aware of this vibration and do not operate the primary valves over 75% open. However it would be prudent to install a limit switch on the valve operator to preclude accidental entry into the vibration range. A manual override of the switch is also necessary for periodic valve testing and cycling.

The following pages summarize findings on the primary and secondary water supply lines to the Hatchery.

PRIMARY WATER LINE SUMMARY

1. Required Capacity = 62.7 CFS (DM 17 and Supplement 1)
2. Max Flow; head box to Hatchery = 70.7 CFS (Measured with all valves open to CFH)
3. Available Flow from Dam to Head Box: Required flow can be met at all pool elevations:

PRIMARY WATER SUPPLY CALCULATED FLOWS

VALVE VIBRATION RANGES
(cfs)

Required Capacity = 62.7 cfs (Max for CFH and DNFH combined)

Pool Elevation	Valve Opening						
	40%	50%	60%	70%	80%	90%	100%
1450	40	54	65	77	88	99	106
1475	41	55	67	79	91	102	109
1500	42	57	69	81	93	105	112
1520	43	58	70	83	95	107	115
1540	44	59	71	85	97	109	117
1560	45	60	73	86	99	111	119
1580	46	61	74	88	101	113	122
1600	47	62	75	90	103	115	124

Analysis: Water supply requirements can be met at all forebay elevations, at or below 70% valve open. This is below the opening range at which valve vibration is present. Valves should not be operated in the lighter shaded range, over 75 %.

4. VALVE VIBRATION DATA: SEE TABLE (NEXT PAGE)

VALVE VIBRATION DATA
(Primary Valves Only)

Forebay Elevation	North Valve		South Valve	
	% open	Flow (cfs)	% open	Flow (cfs)
1571.49	86 - 90 %	106 - 112	81 - 86 %	100 - 105
1551.63	85 - 90 %	105 - 110		
1541.00			80 - 86 %	98 - 104
1490.90	81 - 85 % Up 90-87% down ^b	98 - 104	87 - 90 %	100 - 106

b. Difference in range believed to be result of slop in gears and inaccuracies in reading the gages.

Analysis: Vibrations occur at approximately the same range at all pool elevations. Valves do not need to be operated above 70 - 75 % to provide required flow.

Recommendation: That a limit switch be installed on the valve operator to preclude accidental entry into the vibration range. A manual override of the switch is also necessary for periodic valve testing and cycling.

**CLEARWATER HATCHERY WATER SUPPLY
ACTUAL USE 1997**

	PRIMARY	SECONDARY
JAN	70.7	5
FEB	70.7	5
MAR	70.7	5
APR	70.7	5
MAY	54	5
JUNE	54	7
JULY	54	9.1
AUG	65	9.1
SEPT	70.7	9.1
OCT	70.7	9.1
NOV	70.7	9.1
DEC	70.7	5
	70.7 Max	9.1 Max

C:\123R5\WCFH\FORMS\CFS.WK4

SECONDARY LINE

1. Required Capacity = 6.5 CFS (DM 17 and Supplement 1)
2. Max Flow head box to Hatchery = 9.1 CFS (Measured with all valves open to CFH)
3. Available Flow from Dam to Head Box: Required flow can be met at all pool elevations:

SECONDARY WATER SUPPLY CALCULATED FLOWS

WATER MEASUREMENT FLOWS
(cfs)

Total Required Capacity = 15.1 cfs, Design Capacity = 17.4cfs
(Combined max for CFH, DNFH & City of Orofino)

Pool Elevation	Valve Opening					
	25%	40%	50%	60%	75%	100%
1450	7.1	11.0	13.7	16.9	20.7	23.3
1475	7.3	11.3	14.2	17.4	21.3	23.9
1500	7.5	11.7	14.5	17.9	21.9	24.6
1520	7.6	11.9	14.8	18.3	22.4	25.1
1540	7.8	12.1	15.1	18.6	22.8	25.6
1560	7.9	12.4	15.4	19.0	23.3	26.1
1580	8.1	12.6	15.7	19.3	23.7	26.6
1600	8.2	12.8	16.0	19.7	24.1	27.1

Analysis: Water supply requirements can be met at all forebay elevations. Secondary valve can be operated over the full range, 0 - 100 % open. The south valve (furthest from the river) appears to have flows about 5% less than the values shown on this table.

SECONDARY PIPELINE

	Hatchery Design Flows	Corps Design Flow (cfs)	Current Hatchery Usage (cfs)	Manufacturer's Recommndation Maximum Flow (cfs)*	Current Hatchery Use +6 cfs Municipal	
JAN	2.2	17.4	18	21.2	24	Demand exceeds capacity
FEB	2.6	17.4	16	21.2	22	Demand exceeds capacity
MAR	2.6	17.4	16	21.2	22	Demand exceeds capacity
APR	3.4	17.4	16.7	21.2	22.7	Demand exceeds capacity
MAY	0.8	17.4	7.2	21.2	13.2	
JUN	11.2	17.4	8.7	21.2	14.7	
JUL	11.4	17.4	12.9	21.2	18.9	
AUG	8.8	17.4	14.2	21.2	20.2	
SEP	8.6	17.4	15.5	21.2	21.5	Demand exceeds capacity
OCT	8.1	17.4	15.6	21.2	21.6	Demand exceeds capacity
NOV	9.3	17.4	16.2	21.2	22.2	Demand exceeds capacity
DEC	2.2	17.4	18.6	21.2	24.6	Demand exceeds capacity

*manufacturer (ameron) recommends a maximum sustained velocity of 12 ft/sec

Primary
84.8 cfs - 89 cfs Calculated By
Mort Munn
L&L P Rymer
Jack Dr Hatch Rymer

System Water Supply

1. Design flows of piping from reservoir to distribution tank.

Primary Line 65 cfs at minimum pool Average = 72.75
 80.5 cfs at maximum pool

secondary line 23 cfs at minimum pool Average = 27.50
 32 cfs at maximum pool

2. Clearwater Piping

Primary 65 cfs
Secondary 6.5 cfs

3. Dworshak 14.3 cfs (6400 gpm)

4. Total Flow into Distribution tank (ave)

$$72.50 + 27.5 = 100.0 \text{ cfs}$$

5. Total Demand out of Distribution Tank

$$\text{CFH} + \text{DNFH} = 71.5 + 14.3 = 85.8 \text{ cfs}$$

6. Excess Available = $100 - 85.8 = 14.2 \text{ cfs}$

From: Rick Eminent, Walla Walla, Corps.

	Clearwater Hatchery Available Flow in CFS		Dworshak Available Flow in CFS		City Water Available	Dworshak Available Flow in GPM		Approx Pipeline Temp	Approx River Temp	Total Primary	Total Secondary
	Primary	Secondary	Primary	Secondary		Primary	Secondary				
January	65	9	5.7	0	6	5265	0	40	43	70.7	15
February	65	9	5.7	0	6	5265	0	40	41	70.7	15
March	65	9	5.7	0	6	5265	0	43	41	70.7	15
April	65	9	5.7	0	6	5265	0	45	41	70.7	15
May	20.7	9	50	0	6	25200	0	52	43	70.7	15
June 1-14	20.7	9	50	0	6	25200	0	54	45	70.7	15
June 15-30	45.7	9	25	0	6	13950	0	54	47	70.7	15
July 1-14	45.7	9	25	0	6	13950	0	54	45	70.7	15
July 15-31	54	9	16.7	0	6	10215	0	54	45	70.7	15
August	54	9	16.7	0	6	10215	0	54	47	70.7	15
September	65	9	5.7	0	6	5265	0	54	47	70.7	15
October	65	9	5.7	0	6	5265	0	54	47	70.7	15
November	65	9	5.7	0	6	5265	0	52	48	70.7	15
December	65	9	5.7	0	6	5265	0	45	45	70.7	15

Max CFS through primary in 70.7
 Max CFS through secondary is 18.0

Elevation of Hydro Weir - 1026.0'

18-

3000

03/31/1991 00:21

505-843-3534

WDAIF LOWER GRANITE

Flow Tests for Sleeve Valves at Dworshak Small Hydroelectric Project

Testing engineer
Assisting engineers
Hatchery personnel

Martin Ahmann, USACE
Dave Embree & Carl Breneise, USACE
Jerry McGehee

(509-843-1493 ext. 2541)

Date 23-Jun-00
Pool Level (ft) 1598.5

	Time	Valve (PRV #)	Position (% open)	Penstock Pressures		Distribution Levels (ft)		Vibration	Discharge (cfs)	Delta H on Screen (inches)
				gauge	transducer	Primary	Secondary			
Initial Readings	11:00	9	56%	213	220	16.01	16.10	normal		
	11:00	10	0%	213	220	16.01	16.10	normal		
	11:00	11	55%	209	208	16.01	16.10	normal		
	11:00	12	100%	209	208	16.01	16.10	normal		
Flow Test for PRV-9	11:24	9	58%	218	220	16.01	16.11	normal	69.4	30
	11:25	9	61%	214	215	16.20	16.11	normal	75.7	36
	11:30	9	66%	208	210	16.33	16.11	normal	83.4	43
	11:36	9	71%	202	204	16.44	16.11	normal	89.9	50
	11:40	9	76%	196				normal	100.0	>60
	11:41	9	74%	197	200	16.52	16.10	normal	93.3	59
Flow Test for PRV-10	12:22	10	53%	217	218	16.07	16.10	normal	73.5	31
	12:27	10	58%	212	214	16.20	16.10	normal	78.1	37
	12:32	10	63%	205	207	16.34	16.10	normal	85.5	44
	12:37	10	68%	200	202	16.48	16.10	normal	90.5	51
	12:44	10	70%	197	200	16.53	16.10	normal	95.0	54
	12:47	10	72%	193	196	16.62	16.10	normal	98.5	58
Flow Test for PRV-11	14:18	11	57%	208	208	15.94	16.11	normal	14.8	
	14:22	11	61%	196	196	15.95	16.20	normal	17.3	1
	14:27	11	66%	185	186	15.96	16.27	normal	19.1	2
	14:33	11	71%	173	175	15.93	16.33	normal	20.8	4
	14:37	11	76%	165	167	15.97	16.38	normal	22.1	5
	14:43	11	81%	157	162	15.97	16.43	normal	23.2	
	14:48	11	86%	148		15.94	16.48	normal	24.4	6
	14:50	11	91%	143		15.95	16.50	normal	24.7	7
	15:10	11	95%	142		15.97	16.51	normal	24.8	7
	15:15	11	97%	143		15.96	16.50	normal	25.0	7
Flow Test for PRV-12										

Test not conducted because valve was not operable.

83-7127

Attachment #3A to Beneficial Use Field Report

Shared Water Agreement

Reservoir Water Pipeline Availability

	Clearwater Hatchery Available Flow in CFS		Dworshak Available Flow in CFS		Total Available Available Flow in CFS		Dworshak Available Flow in GPM		Secondary City Water Available	Approx Pipeline Temp	Approx River Temp
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary			
January	65	9	5.7	5	70.7	14	2565	2250	6	40	43
February	65	9	5.7	5	70.7	14	2565	2250	6	40	41
March	65	9	5.7	5	70.7	14	2565	2250	6	43	41
April	65	9	5.7	5	70.7	14	2565	2250	6	45	41
May	20.7	9	50	5	70.7	14	22500	2250	6	52	43
June 1-14	20.7	9	50	5	70.7	14	22500	2250	6	54	45
June 15-30	46.7	9	24	5	70.7	14	10800	2250	6	54	47
July 1-14	46.7	9	24	5	70.7	14	10800	2250	6	54	45
July 15-31	54	9	16.7	5	70.7	14	7515	2250	6	54	45
August	65	9	5.7	5	70.7	14	2565	2250	6	54	47
September	65	9	5.7	5	70.7	14	2565	2250	6	54	47
October	65	9	5.7	5	70.7	14	2565	2250	6	54	47
November	65	9	5.7	5	70.7	14	2565	2250	6	52	48
December	65	9	5.7	5	70.7	14	2565	2250	6	45	45

Max CFS through primary in 70.7

Max CFS through secondary is 18.0

Max CFS to CRW through secondary is 13.0 cfs

Elevation of Hydro Weir - 1026.0'

83-7127

Attachment #3B to Beneficial Use Field Report

1997 Operating Flows

Clearwater Fish Hatchery Water Supply in CFS

1997 Operating Flows												
	36-inch Pipeline			Total Max	Total Ave	18-inch Pipeline			Orofino	Total w/o O	Total CFH	Total DNFH
	CFH	DNFH	Max DNFH			CFH	DNFH	Subtotal				
Jan	71	7.5	18.8	89.8	78.5	5	6.4	11.4	(1.6)	11.4	76	13.9
Feb	71	9	18.8	89.8	80	5	5.5	10.5	(1.3)	10.5	76	14.5
Mar	71	10	18.8	89.8	81	5	4.4	9.4	(1.4)	9.4	76	14.4
Apr	71	7.7	18.8	89.8	78.7	5	3.6	8.6	(1.4)	8.6	59	7.6
May	54	4.9	9.4	63.4	58.9	5	2.7	7.7	(1.7)	7.7	61	8.6
Jun	54	6	10.5	64.5	60	7	2.6	9.6	(2.2)	9.6	63	13.3
Jul	54	8.9	18.2	72.2	62.9	9	4.4	13.4	(3.0)	13.4	74	14.7
Aug	65	11.1	17.7	82.7	76.1	9	3.6	12.6	(2.6)	12.6	80	13.8
Sep	71	8.6	17.7	88.7	79.6	9	5.2	14.2	(1.6)	14.2	80	12.8
Oct	71	6.5	18.8	89.8	77.5	9	6.3	15.3	(1.3)	15.3	80	12.4
Nov	71	6	18.8	89.8	77	9	6.4	15.4	(1.3)	15.4	76	12.4
Dec	71	6	18.8	89.8	77	5	6.4	11.4	(1.3)	11.4	73.1	12.5
Average	66.3	7.7			73.9	6.8	4.8	11.6	(1.7)	11.6		

Maximum present flows in the 42/36-inch and 20-inch pipelines under the river are 70.7 and 9.1 cfs respectively. Ported sleeve valve on the primary (large) pipeline starts vibrating at 71 cfs plus use at the Dworshak Hatchery. Maximum present flow to the DNFH is 18.8 cfs and 9.4 cfs in the respective primary and secondary pipelines. The DNFH flows are averaged from 7/93 to 10/97. Orofino estimated needed flows taken from the "Lower Snake River Fish and Wildlife Compensation, Clearwater Fish Hatchery, Design Memorandum No. 17, Supplement No. 1, Hatchery Water Supply," August 1989, Exhibit 3. Shaded quantities are maximum use months.

RM/IDWR
11/13/97

APR 14 1999

MAILED

MEMORANDUM

Date: Dec 10, 2020
To: Water Right File 83-7127
From: Michele Edl
Re: permit ownership

On Dec 3, 2020, I made a connection to the US Fish and Wildlife Service and confirmed their interest in Permit 83-7127.

In phone call with Mr. Chris Starr, I explained the status of the right and my preference for getting the ownership updated before a license for the use would be issued. Mr. Starr promised to locate and provide me a copy of the ownership transfer document.

Today, I received an email from Mr. Starr which came with an attachment. The attachment was a copy of the document which transferred ownership of the Clearwater Fish Hatchery in Ahsahka, Idaho from the Department of the Army, U.S. Army Corps of Engineers to the Department of the Interior, U.S. Fish and Wildlife Service. See attached.

Mr. Starr does not have signatory authority and recommended that IDWR address our requests for official signatures to Mr. Nate Wiese (WE-SEE).

Edl, Michele

From: Starr, Chris <chris_starr@fws.gov>
Sent: Thursday, December 10, 2020 1:22 PM
To: Edl, Michele
Cc: Starr, Chris
Subject: Clearwater Fish Hatchery Water Right
Attachments: CLW-USACE transfer papers.pdf

Hi Michele -

Attached are the transfer papers for the Clearwater Fish Hatchery, transferring ownership of this facility from the Department of Defense (U.U. Army Corp of Engineers) to U.S. Fish and Wildlife Service (Dept of Interior). I hope this helps you with the finalization of the water rights documents for the Clearwater Fish Hatchery. Please let me know if you need anything else.

thanks

Chris Starr

LETTER OF TRANSFER
CLEARWATER FISH HATCHERY
AHTAHKA, IDAHO

From: The Department of the Army, U. S. Army Corps of Engineers

To: The Department of the Interior, U. S. Fish and Wildlife Service

By these presents, I LOUIS CALDERA, Secretary of the Army do hereby transfer to the Department of the Interior all of the real property, interests, rights, permits, licenses, and appurtenances acquired by the U. S. Army Corps of Engineers for the Clearwater Fish Hatchery to be used, operated, maintained, and funded through the U. S. Fish and Wildlife Service (USFWS), as provided under current authorization for the Lower Snake River Fish and Wildlife Compensation Plan.

Article 1 - Authority. This assignment is made pursuant to the authority of Section 856, Public Law 99-662, entitled the Water Resources Development Act of 1986. This legislation approved the recommendations of the Chief of Engineers' Special Report of March 6, 1985, on the Lower Snake River Fish and Wildlife Compensation Plan. Paragraph 5(e) of this Special Report recommended authorization be provided to allow the "transfer of jurisdiction over all compensation plan fish hatcheries, appurtenant facilities, and lands to the U. S. Fish and Wildlife Service for operation, maintenance, and replacement, upon completion of construction by the Corps of Engineers."

Article 2 - Purpose and Nature of Action. On the basis of the authorizing legislation, the property included within this transfer is not excess property of the Department of the Army as defined by the Federal Property and Administrative Services Act of 1949 and implementing regulations issued under Title 41 of the Code of Federal Regulations. Therefore, General Services Administration disposal procedures are not applicable. The property is being assigned by the Department of the Army to the Department of the Interior, USFWS, as a congressionally authorized change of function and agency responsibility. Accordingly this assignment is not subject to reimbursement. This action concerns civil works project lands and is not subject to the requirements of 10 U.S.C., Section 2662, which pertains to military properties.

Article 3 - Description of Property and Project Maps. The legal description for the main hatchery is provided at Exhibit A. Articles 4 and 7 summarize all interests. A map of the project is provided as Exhibit B.

Article 4 - Acreages and Interests Assigned. Permanent interests are summarized here.

Tract Fee	Grantor	Acres	Amount	Purpose
1000	Potlatch Corp	8.48	\$158,500	Main Hatchery Site
1001	Steinbruecker	1.74	\$42,500	Main Hatchery Site
1002	Byrd, et al	2.71	\$47,508	Main Hatchery Site
1003	Potlatch Corp	2.95	\$108,000	Main Hatchery Site
1004	Byrd, et al	1.74	\$30,509	Main Hatchery Site

Easements

1009E	Clearwater Power	0.19	\$4,680	Water Supply Pipelines
1011E	Mathews	0.08	\$5,400	Water Supply Pipelines
1012E1	Henson	0.01	\$375	Water Supply Pipelines

Licenses

1008L	Camas Prairie RR	0.18	\$100	Utilities Crossing
1010L-1	IDOT	0.15	\$0	Water Supply Pipelines
1013L	Camas Prairie RR	0.72	\$100	Roadway Crossing
1016L	Camas Prairie RR	0	\$100	Domestic Water Line

TOTALS		18.08	\$397,772	
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Also included is an easement in and to the lands and features of the Dworshak Dam and Reservoir Project for the purposes of operating, maintaining and replacing the hatchery water supply system from the forebay area to the water distribution box and continuing along the Clearwater River providing service to the Clearwater Hatchery, including use and access to essential project areas and roads.

Article 5 - Effective Date of Transfer. This Letter of Transfer shall be effective upon execution.

Article 6 - Possession, Accountability, and Transfer of Deeds and Title Papers. The premises have already been made available to USFWS for operations and maintenance purposes. Accountability records, deeds, and title papers will be transferred from the U. S. Army Corps of Engineers, Walla Walla District to the regional office of the USFWS upon execution of this instrument.

Article 7 - Encumbrances and Reservations. The main hatchery tracts were acquired subject to an easement in favor of the Washington Water Power Co. recorded June 26, 1963 in Book 53 Page 424 for an overhead transmission line. There are no other title exceptions.

Article 8 - Source of Title and Acquisition Costs. The total cost of all permanent interests amounts to \$397,772. The names of the grantees are listed in Article 4.

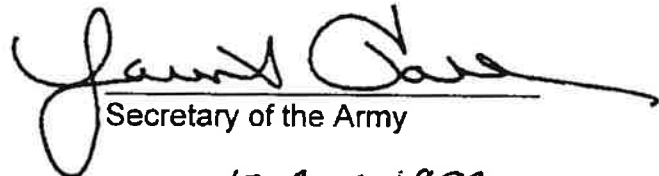
Article 9 - Buildings, Improvements, and Real Property. A list of the permanent improvements constructed and the appurtenant facilities of the Clearwater Hatchery is provided as Exhibit C.

Article 10 - CERCLA Notice. The information contained in this notice is required under the authority of regulations under Section 120(h) of the Comprehensive Environmental Response, Liability, and Compensation Act, as amended (CERCLA) 42 U.S.C. 962(h). The Grantor has made a complete search of its records concerning the property subject to this contract. Those records indicate that there are no hazardous substances in any hazardous or reportable quantities that were stored for one year or more released or disposed of on the property during the time the property was owned by the United States of America. Environmental screening reports as performed by the U.S Army Corps of Engineers and by the accepting agency, the U.S. Fish and Wildlife Service are provided at Exhibit D.

NOW THEREFORE, in consideration of the foregoing premises, I hereby approve and deliver this Letter of Transfer and cause all of the property, facilities, rights, and interests enumerated above and listed within Exhibits A, B, and C, attached hereto and by this reference incorporated herein, to be assigned to the Department of the Interior for use by its U. S. Fish and Wildlife Service.

DATED this 13TH day of AUGUST 1999.

DEPARTMENT OF THE ARMY.


Secretary of the Army

Date: 13 AUG 1999

The transfer of the above mentioned real property, easements, permits, licenses, improvements, and personal property is hereby accepted by the Department of the Interior, U. S. Fish and Wildlife Service.

DEPARTMENT OF THE INTERIOR.


Secretary of the Interior

Date: APR 10 2000

LEGAL DESCRIPTION

CLEARWATER FISH HATCHERY

A tract of land situate in Government Lot 1, Section 33 and Government lot 4, Section 34 according to the official plat approved July 22, 1893, of Township 37 North, Range 1 East of the Boise Meridian in the county of Clearwater, State of Idaho. Said tract being more particularly described as follows:

Indian Allotment tracts 1837, 1859, 1835, 1817, 1878 and 1839, according to the official supplementary plat of Sections 33 and 34 approved September 15, 1899 and subsequent supplemental plats eliminating Indian Allotment Tract conflicts.

EXCEPT: That portion of said tracts lying North of the South line of the former Northern Pacific Railroad "AHSKA" station grounds and right-of-way according to the March 1909 survey and March 1910 unrecorded plat thereof archived at the Northern Pacific Railroad "Office of the Division Engineer" in Spokane, Washington.

Containing 17.6 acres more or less.

JTN\05\09\95
CLRWTRFH.LGL

EXHIBIT 'A'

10/10/95

CLEARWATER HATCHERY

1CFH54.XLS

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY										Form Approved DMU No. 0704 D188	
LOWER SNAKE RIVER F & W COMPENSATION PLAN										PAGE 1	OF 8 PAGES
1. WORK (Installation/Activity and Zip Code) Crops of Engineers Walla Walla District Walla Walla, WA 99161		2. OPERATIONS UNIT Walla Walla		3. CONTRACT CODE CJ4		4. OPERATING AGENCY		5. DATE		6. AMOUNT	
4. TITLE (Installation/Activity and Zip Code) 11. Fish and Wildlife Service		10. OPERATIONS UNIT		11. CONTRACT CODE		12. OPERATING AGENCY		13. DATE		14. AMOUNT	
15. TITLE (Installation/Activity and Zip Code)		16. OPERATIONS UNIT		17. CONTRACT CODE		18. OPERATING AGENCY		19. DATE		20. AMOUNT	
21. TITLE (Installation/Activity and Zip Code)		22. OPERATIONS UNIT		23. CONTRACT CODE		24. OPERATING AGENCY		25. DATE		26. AMOUNT	
27. STATEMENT OF COMPLETION		28. TITLE (Installation/Activity and Zip Code)		29. OPERATIONS UNIT		30. CONTRACT CODE		31. OPERATING AGENCY		32. DATE	
33. TITLE (Installation/Activity and Zip Code)		34. OPERATIONS UNIT		35. CONTRACT CODE		36. OPERATING AGENCY		37. DATE		38. AMOUNT	
39. TITLE (Installation/Activity and Zip Code)		40. OPERATIONS UNIT		41. CONTRACT CODE		42. OPERATING AGENCY		43. DATE		44. AMOUNT	
45. TITLE (Installation/Activity and Zip Code)		46. OPERATIONS UNIT		47. CONTRACT CODE		48. OPERATING AGENCY		49. DATE		50. AMOUNT	
51. TITLE (Installation/Activity and Zip Code)		52. OPERATIONS UNIT		53. CONTRACT CODE		54. OPERATING AGENCY		55. DATE		56. AMOUNT	
57. TITLE (Installation/Activity and Zip Code)		58. OPERATIONS UNIT		59. CONTRACT CODE		60. OPERATING AGENCY		61. DATE		62. AMOUNT	
63. TITLE (Installation/Activity and Zip Code)		64. OPERATIONS UNIT		65. CONTRACT CODE		66. OPERATING AGENCY		67. DATE		68. AMOUNT	
69. TITLE (Installation/Activity and Zip Code)		70. OPERATIONS UNIT		71. CONTRACT CODE		72. OPERATING AGENCY		73. DATE		74. AMOUNT	
75. TITLE (Installation/Activity and Zip Code)		76. OPERATIONS UNIT		77. CONTRACT CODE		78. OPERATING AGENCY		79. DATE		80. AMOUNT	
81. TITLE (Installation/Activity and Zip Code)		82. OPERATIONS UNIT		83. CONTRACT CODE		84. OPERATING AGENCY		85. DATE		86. AMOUNT	
87. TITLE (Installation/Activity and Zip Code)		88. OPERATIONS UNIT		89. CONTRACT CODE		90. OPERATING AGENCY		91. DATE		92. AMOUNT	
93. TITLE (Installation/Activity and Zip Code)		94. OPERATIONS UNIT		95. CONTRACT CODE		96. OPERATING AGENCY		97. DATE		98. AMOUNT	
99. TITLE (Installation/Activity and Zip Code)		100. OPERATIONS UNIT		101. CONTRACT CODE		102. OPERATING AGENCY		103. DATE		104. AMOUNT	

LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN

10/10/95

CLEARWATER HATCHERY

1CFH54.XLS

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY LOWER SNAKE RIVER F & W COMPENSATION PLAN										Form Approved GMI No. 0704 0188	
PAGE 2 OF 6 PAGES											
1 FROM (Installation/Activity and Zip Code) Corps of Engineers Walla Walla District Walla Walla, Wa 99142		2 OFFEROR NAME Walla Walla		3 INSTAL CODE G4		4 OPERAT- ING AGENCY		5 DATE		6 SERIAL NUMBER	
7 TO (Installation/Activity and Zip Code) U.S. Fish and Wildlife Service		8 OPERATING UNIT		9 OFFEROR CODE		10 OPERAT- ING AGENCY		11 ACCEPT- ING NUMBER		12 AC- CEPTANCE UNIT NUMBER	
										13 TYPE OF TRANSFER FROM A. NEW CONSTRUCTION B. RECONSTRUCTION C. REPAIR D. CAPITAL IMPROVEMENT (New/Refurbish) E. OTHER (Specify)	
14 NAME NO		15 FACILITY CLEARWATER HATCHERY Main Contract 89 B-14		16 NO OF UNITS		17 TYPE		18 UNIT UP MEAS		19 REMARKS	
20		21		22		23		24		25	
19 Sedimentation Pond				1 job						\$1,335,200	
20 Cleaning Pond				1 job						\$456,000	
21 Domestic Water System				1 job						\$168,400	
22 Maintenance Water System				1 job						\$74,000	
23 Exterior Electric				1 job						\$304,900	
24 Exterior Signs/Poles				1 job						\$2,700	
25 Landscaping/Irrigation				1 job						\$268,700	
										TOTAL THIS CONTRACT \$15,713,112	
22 STATEMENT OF COMPLETION The facilities listed herein are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the agency except for the deficiencies listed on the reverse side.										Our signatures below attest to 6 pages of real property inventory.	
23 SIGNATURE OF OFFEROR <i>Richard Carth</i>				24 DATE 10 Oct 1995				25 ACCEPTED BY <i>Edouard J. Crateau</i> EDOUARD J. CATEAU Program Manager, LSRFWCP			
26 SIGNATURE OF GRANTEE <i>10-16-95</i>				27 DATE				28 REMARKS			
Chief, Real Estate Division Walla Walla District											

10/10/95

CLEARWATER HATCHERY

ICFH54.XLS

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY										Form Approved OMB No. 0104-0188	
LOWER SNAKE RIVER F & W COMPENSATION PLAN										PAGE 3 OF 6 PAGES	
1 FROM (Installation/Activity and Zip Code)		2 OPERATING UNIT		3 UNIT NO.		4 OPERATING AGENCY		5 DATA		6 MAP NUMBER	
Cmpt of Engineers Walla Walla District Walla Walla, Wa 99367		Walla Walla		04						7 SERIAL NUMBER	
9 TO (Installation/Activity and Zip Code)		10 OPERATING UNIT		11 DISTRICT CODE		12 OPERATING AGENCY		13 ACQUIRING NUMBER		14 CONTRACT NUMBER	
U S Fish and Wildlife Service										15 PROJECT NUMBER	
16 ITEM NO.		17 FACILITY		18 NO OF UNITS		19 TYPE		20 UNIT OF MEAS		21 REMARKS	
		CLEARWATER HATCHERY OPERATOR'S RESIDENCES									
1		Site Work, Mobilization Surfacing, earthwork		1		Job					
2		Residences		7		Frame		7			
3		Landscaping/ Irrigation		1		Job					
								TOTAL THIS CONTRACT			
								\$33,300			
								\$464,100			
								\$159,300			
								\$656,700			
22 STATEMENT OF COMPLETION The facilities listed herein are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the issuing agency except for the deficiencies listed on the reverse side.										Our signatures below attest to 6 pages of real property inventory.	
23 SIGNATURE OF ISSUING AGENCY				24 DATE				25 SIGNATURE OF ACCEPTING AGENCY			
<i>Edward J. Crateau</i>				10 Oct 1995				<i>Edward J. Crateau</i>			
Chief, Real Estate Division Walla Walla District								Program Manager, LSRFWCP			
26 PROPERTY VOUCHER NUMBER										10-16-95	

Form Approved

LOWER SNAKE RIVER F & W COMPENSATION PLAN

OMB No. 0704-0188

PAGE 4 OF 6 PAGES

LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN

COMPLETION PHASE 2

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY										Form Approved OMB No 0784-0188	
LOWER SNAKE RIVER F & W COMPENSATION PLAN										PAGE 3 OF 6 PAGES	
1. FROM (Installation/Activity and Zip Code)		2. OPERATING UNIT		3. DISTRICT CODE		4. OPERATING AGENCY		5. DATE		6. REMARKS	
Camp of Engineers Walla Walla District Walla Walla, WA 99182		Walla Walla		GSE							
9. TO (Installation/Activity and Zip Code)		10. OPERATING UNIT		11. DISTRICT CODE		12. OPERATING AGENCY		13. DATE		14. REMARKS	
U.S. Fish and Wildlife Service											
15. TYPE OF TRANSFER		16. BENEFIT		17. PROPERTY							
A. REVENUE		B. BENEFIT		C. PHYSICAL							
C. FAC		D. CUB		E. FISH/LIFE							
F. CAPITAL SUP.		G. OTHER (Specify)									
18. ITEM NO.	19. FACILITY	20. NO OF UNITS	21. TYPE	22. UNIT OF MEAS.	23. Total Quantity	24. COST	25. DRAWING NUMBERS	26. REMARKS			
1	Chinook Raceways Mod.	1	job			\$352,200					
2	Tanks Mod.	1	job			\$9,200					
3	Steelhead Raceways Mod.	1	job								
4	Service Bridge Mod.	1	job			\$259,600					
5	Bulkhead System Mod.	1	job			\$118,000					
6	Steelhead Screens	1	job			\$163,900					
7	Chinook Screens	1	job			\$143,400					
8	Raceway Secondary Water Supply	1	job			\$16,800					
9	Flow Meter	1	job			\$233,000					
10	Valve Installation	1	job			\$65,300					
11	Truck Water Mod.	1	job			\$33,400					
12	Thermowells/Filter	1	job			\$36,500					
13	Incubation Rm HVAC	1	job			\$95,900					
14	Drainage System Mod.	1	job			\$17,700					
15	Residences HVAC Mod	1	job			\$15,900					
16	Feeder Supports	1	job			\$12,600					
17	Visitor Rm Addition	1	job			\$23,200					
18	Shop/Wet Gear Facility	1	job			\$274,500					
19	Chemical Storage Bldg	1	job			\$193,600					
20	New Electrical	1	job			\$175,800					
21	Paving and Repair	1	job			\$35,700					
22	Landscaping/Repair	1	job			\$42,000					
23	Misc work items, repairs system corrections	1	job			\$19,000					
TOTAL THIS						\$2,393,750					
27. STATEMENT OF COMPLETION: The facilities listed herein are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the agency except for the deficiencies listed on the reverse side.										DATE	
TRANSFERRED BY (Signature) EDUARD J. CRATEAU 11/11/95 (Date) (Type) (Signature)										10-16-95 PROPERTY TRANSFERRED	
ACCEPTED BY (Signature) EDUARD J. CRATEAU Program Manager, LSKFWCP											
10 Oct 1995 Chief, Real Estate Division Walla Walla District											

CLEARWATER HATCHERY
WATER SUPPLY

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY										Form Approved OMB No. 0704-0188	
LOWER SNAKE RIVER F & W COMPENSATION PLAN										PAGE 6 OF 6 PAGES	
1. FROM (Installation/Activity and Zip Code)		2. OPERATING UNIT		3. DISTRICT CODE		4. OPERATING DIVISION		5. DATE		6. NUMBER	
Corps of Engineers Walla Walla District Walla Walla, Wa 99362		Walla Walla		G4						7. SERIAL NUMBER	
8. CONTRACT NUMBER										90 D-32	
9. TO (Installation/Activity and Zip Code)		10. OPERATING UNIT		11. DISTRICT CODE		12. OPERATING DIVISION		13. ACQUISITION NUMBER		14. TYPE OF TRANSACTION	
U S Fish and Wildlife Service										15. TYPE OF TRANSACTION A. NEW CHANGE ... EXISTING ... FAC ... CAPITAL OTHER (Specify)	
16. BLIND		17. PHYSICAL		18. CURE		19. FIRM CODE		20. OTHER (Specify)		21. RESULT	
ITEM NO.		FACILITY		NO OF UNITS		TYPE		UNIT OF MEAS		REMARKS	
1		CLEARWATER HATCHERY		2		3		4		5	
1		WATER SUPPLY		2		3		4		5	
1		Mobilization/DeMob.		1		job					
2		Intake System		1		job					
3		Dam Gallery Piping		1		job					
4		Dam Face Piping		1		job					
5		Water Supply Lines		1		job					
6		Piping Trenching and anchors		1		job					
7		Distribution Tank		1		job					
8		River Crossing		1		job					
9		Restoration/Planting		1		job					
10		Knifegate Main Valve & Actuator		1		job		24" D			
TOTAL										\$11,645,355	
27. STATEMENT OF COMPLETION The facilities listed herein are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of this agency except for the deficiencies listed on the reverse side.										DATE	
10 Oct 1995										10-16-95	
10. PROPERTY										11. VOUCHER NUMBER	
Chief, Real Estate Division Walla Walla District											

Edl, Michele

From: Patterson,Joel <joel.patterson@idfg.idaho.gov>
Sent: Tuesday, October 20, 2020 2:17 PM
To: Edl, Michele
Subject: RE: discharge measurement

So after running a sharp crested weir calculation using a physical measurement I come up with 54.9 CFS which is close to the Siemens controller measurement of 53.4. I did find out that DNFH is currently using about 25 CFS at their facility that also originates from the hydro. CFH use will steadily increase through the end of the calendar year and reach maximum sometime in late December or January until fish are released in March.

I know the transducer is still behaving oddly but this flow is probably representative of the actual use for CFH at this time of the production cycle given our current biomass.

Weir length (or width) = 123.4 ft
Flow depth over weir = 3.125 in

Discharge conversion for a sharp crested weir given below:

Discharge

Crest Inches	Discharge per Foot cfs	gpm
3 1/8	0.44500	199.00

I hope this helps, let me know if you need anything else.

From: Edl, Michele <Michele.Edl@idwr.idaho.gov>
Sent: Monday, October 19, 2020 3:06 PM
To: Patterson,Joel <joel.patterson@idfg.idaho.gov>
Subject: RE: discharge measurement

Joel Patterson,

I am writing up the beneficial use field report for right 83-7127 and fish propagation water use at the Clearwater Fish Hatchery.

Orofino is a long days drive from Boise and Adam Frederick and Luke Bates did me a great service by visiting the site in my place. They had very good things to say about you and your skill set.

They also did a very good job documenting most of the items that I need to complete the report. However, they did not provide a discharge measurement reading. I have photos showing the weir and the activity at the weir, but no measurement record.

Can you provide that reading to me?

Thank you.

Michele Edl

Edl, Michele

From: Gunter,Beau <beau.gunter@idfg.idaho.gov>
Sent: Wednesday, October 28, 2020 5:25 PM
To: Edl, Michele
Subject: RE: CFH Capacities
Attachments: measured flow to hatchery.docx

That was the correct attachment. It identifies the capacity flows they measured in each pipeline and identifies the date the work was completed.

I found these (attached) as well. I believe these are the "enclosure" that the other document refers to. I apologize for the quality. These are old documents and have obviously been copied too many times. The relevant information for this exercise is statement number 2 on both document.

I wish the tables were more legible. It is related to flows from the reservoir to the distribution box. Not from the distribution box to the hatchery so it is not the info we need for this exercise. It may however be helpful for the a better understanding of the hydro system operations. I thought it might be helpful for you.

From: Edl, Michele <Michele.Edl@idwr.idaho.gov>
Sent: Wednesday, October 28, 2020 1:12 PM
To: Gunter,Beau <beau.gunter@idfg.idaho.gov>
Subject: RE: CFH Capacities

I received a 2-page letter to Tom Rogers from David B Hull, nothing more.

From: Gunter,Beau [<mailto:beau.gunter@idfg.idaho.gov>]
Sent: Wednesday, October 28, 2020 2:05 PM
To: Edl, Michele <Michele.Edl@idwr.idaho.gov>
Subject: RE: CFH Capacities

There was an attachment. I have attached it again. Did it come through?

From: Edl, Michele <Michele.Edl@idwr.idaho.gov>
Sent: Wednesday, October 28, 2020 1:02 PM
To: Gunter,Beau <beau.gunter@idfg.idaho.gov>
Subject: RE: CFH Capacities

Beau Gunter,

First,
Thank you. I believe that this nicely justifies recommending 79.8 cfs.

Second,
I don't remember seeing this document before. It's not part of water right file. Was I supposed to get attachments too?

Michele Edl

PRIMARY WATER LINE SUMMARY

1. Required Capacity = 62.7 CFS (DM 17 and Supplement 1)
2. Max Flow; head box to Hatchery = 70.7 CFS (Measured with all valves open to CFH)
3. Available Flow from Dam to Head Box: Required flow can be met at all pool elevations:

PRIMARY WATER SUPPLY CALCULATED FLOWS

AVAILABLE FLOW FROM DAM TO HEAD BOX
(cfs)

Required Capacity = 62.7 cfs (Max for CFH and DNFH combined)

Pool Elevation	Valve Opening						
	40%	50%	60%	70%	80%	90%	100%
1450	40	54	65	77	88	99	106
1475	41	55	67	79	91	102	109
1490	42	56	68	81	93	105	112
1500	42	57	69	81	93	105	112
1520	43	58	70	83	95	107	115
1540	44	59	71	85	97	109	117
1560	45	60	73	86	99	111	119
1580	46	61	74	88	101	113	122
1600	47	62	75	90	103	115	124

Analysis: Water supply requirements can be met at all forebay elevations, at or below 70% valve open. This is below the opening range at which valve vibration is present. Valves should not be operated in the lighter shaded range, over 75 %.

4. VALVE VIBRATION DATA: SEE TABLE (NEXT PAGE)

SECONDARY LINE

1. Required Capacity = 6.5 CFS (DM 17 and Supplement 1)
2. Max Flow head box to Hatchery = 9.1 CFS (Measured with all valves open to CFH)
3. Available Flow from Dam to Head Box: Required flow can be met at all pool elevations:

SECONDARY WATER SUPPLY CALCULATED FLOWS

WIRE MEASURE ADDITIONS
(cfs)

Total Required Capacity = 15.1 cfs, Design Capacity = 17.4cfs
(Combined max for CFH, DNFH & City of Orofino)

Pool Elevation	Valve Opening					
	25%	40%	50%	60%	75%	100%
1450	7.1	11.0	13.7	16.9	20.7	23.3
1475	7.3	11.3	14.2	17.4	21.3	23.9
1490	7.4	11.4	14.3	17.5	21.4	24.0
1500	7.5	11.7	14.5	17.9	21.9	24.6
1520	7.6	11.9	14.8	18.3	22.4	25.1
1540	7.8	12.1	15.1	18.6	22.8	25.6
1560	7.9	12.4	15.4	19.0	23.3	26.1
1570	8.0	12.5	15.5	19.1	23.4	26.2
1580	8.1	12.6	15.7	19.3	23.7	26.6
1600	8.2	12.8	16.0	19.7	24.1	27.1

Analysis: Water supply requirements can be met at all forebay elevations. Secondary valve can be operated over the full range, 0 - 100 % open. The south valve (furthest from the river) appears to have flows about 5% less than the values shown on this table.

Edl, Michele

From: Gunter, Beau <beau.gunter@idfg.idaho.gov>
Sent: Wednesday, October 28, 2020 12:48 PM
To: Edl, Michele
Subject: CFH Capacities
Attachments: CFH Capacities.docx

Michele,

I think you have already received this document. I was reviewing everything again and I think the dates identified on this meet one of the requests you had for me. Specifically the need for at least one day within the permit period which shows flow at capacities. This document identifies the capacity testing was completed in the summer of 1994. I believe that falls within the dates you need. They would have had to run the full flow through the facility to do the testing.

As we have discussed before. The capacities identified in this document of a total of 79.8 cfs is the minimum water right we need.

A note on the "required capacities" identified in this document. Those capacities come from early engineer designs of the hatchery identifying needs to meet the goals of the original design. They do not reflect real operations once the full capacity was identified. In other words, those original "required capacities" are not relevant once full capacity was identified.

I hope this helps. Please let me know if you agree that this meets the need of demonstrating that those flow volumes did pass through the hatchery within the permit period.?

Beau Gunter
Hatchery Complex Manager, Idaho Department of Fish and Game
Clearwater Regional Office
3316 16th Street
Lewiston, Idaho 83501
Office: (208) 750-4267
Cell: (208) 339-8479





DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON 99362-9268
October 5, 1994

REPLY TO
ATTENTION OF:

Programs and Project
Management Division

*Historic
Documents*

Mr. Tom Rogers, Supervisor
Anadromous Hatcheries
Idaho Department of Fish and Game
600 South Walnut Street
P.O. Box 25
Boise, Idaho 83707

Dear Mr. Rogers:

In April 1993, the Corps of Engineers (Corps) received a request from the Clearwater Hatchery (CWH) personnel to determine actual water flows from the primary and secondary waterlines of the Clearwater Hatchery Water Supply Line. The Corps purchased state-of-the-art ultrasonic transit flow meters and from May 1994 through August 1994 performed flow measurement tests. The enclosure provides details of our testing with both measured and calculated capacities at various pool elevations. Flows were measured from Dworshak Dam to the distribution structure and from the distribution structure to CWH. In summary, we offer the following.

- a. Available water supply from the distribution structure to the CWH exceeds both required and designed capacities. On the primary line, the maximum capacity available to CWH is 70.7 cfs. On the secondary line, the maximum capacity available to CWH is 9.1 cfs. The required capacities of 62.7 cfs from the primary line and 6.5 cfs from the secondary line were specified in the Clearwater Hatchery and Clearwater Water Supply Design Memorandums (DM 17 and Supplement 1).
- b. These capacities are available at minimum operating forebay elevations in the Dworshak Reservoir.
- c. The available water supply exceeds quantities requested by the Idaho Department of Fish and Game when criteria were established in June 1983 (see enclosure 2). Changing the water source has not impacted flow recommendations as set forth in the CWH criteria. Reference enclosure 3. This is the actual water schedule that was defined in the Supplement to DM 17 for the Clearwater Water Supply Waterline.
- d. The valve on the primary line at the distribution structure must not be operated above a 75 percent opening. The Corps highly recommends that the CWH staff

527-7941
Ralph Melton

become familiar with the data from these tests and this information becomes part of the CWH O&M Manual.

This concludes our flow testing. The recommendations with regards to the limit switch and the manual override switch will be installed by the Corps.

Please call me if you have any questions or concerns at 509-522-6797.

Sincerely,



David B. Hull
Project Manager, Lower Snake River
Fish and Wildlife Compensation Plan

Enclosures

CF:
Ed Crateau, LSRCF Manager
U.S. Fish and Wildlife Service
4696 Overland Road, Room 560
Boise, Idaho 83705

Phil Jepson, Chief
Bureau of Engineering
Idaho Dept of Fish and Game
600 South Walnut Street
P.O. Box 25
Boise, Idaho 83707

Jerry McGehee, Manager
Clearwater Fish Hatchery
Idaho Dept of Fish and Game
4156 Ahsahka Road
Ahsahka, Idaho 83520

Edl, Michele

From: Patterson, Joel <joel.patterson@idfg.idaho.gov>
Sent: Monday, October 19, 2020 3:53 PM
To: Edl, Michele
Subject: RE: discharge measurement
Attachments: total flow meter oct 19 2020.jpg

Pic attached. The flow reading is suspect, we have had issues recently with the meter reading inconsistently. I had the installer out to trouble shoot and he said the transducer is bad and needs to be replaced.

From: Edl, Michele <Michele.Edl@idwr.idaho.gov>
Sent: Monday, October 19, 2020 3:06 PM
To: Patterson, Joel <joel.patterson@idfg.idaho.gov>
Subject: RE: discharge measurement

Joel Patterson,

I am writing up the beneficial use field report for right 83-7127 and fish propagation water use at the Clearwater Fish Hatchery.

Orofino is a long days drive from Boise and Adam Frederick and Luke Bates did me a great service by visiting the site in my place. They had very good things to say about you and your skill set.

They also did a very good job documenting most of the items that I need to complete the report. However, they did not provide a discharge measurement reading. I have photos showing the weir and the activity at the weir, but no measurement record.

Can you provide that reading to me?

Thank you.

Michele Edl

SIEMENS

SITRANS LUT400



IDAHO DEPT OF FISH & GAME



5 2 4 9 0



Edl, Michele

From: Patterson, Joel <joel.patterson@idfg.idaho.gov>
Sent: Friday, October 02, 2020 4:29 PM
To: Edl, Michele
Cc: Frederick, Adam
Subject: info and pics
Attachments: primary ultrasonic.jpg; secondary ultrasonic.jpg; primary and secondary (foreground) pipes.jpg

Hi Michele,

Ultrasonic pics:

Thought I would get you started on some info, attached are pics of the ultrasonic flow meters inside the dam in the pipe gallery a short distance from where the pipes come through the face of the dam.

Primary and Secondary (foreground) pic:

This is our intake location at the dam where the pipes come through the reservoir face of the dam for both the primary and secondary (in foreground) pipes. Not likely to be able to get in the dam on Adam's visit due to access restrictions but we will be able to access the top of the dam above the intake.

Also attached is an elevation for the secondary (fixed) intake.

Pipe Plan for the hatchery from as-builts also attached. Primary (warm) and secondary (cold) pipes from the hydro enter the hatchery (CFH) from the east side at drawing locations 1 and 2. I believe elevations are included.

Also include is a diagram of the hydro facility itself. The primary line (42") and secondary line (18") from the dam enter the hydro at either end of the facility, primary on the right and secondary on the left. Lines (4 total) leaving the hydro "to DNFH" (2) and "to CFH" (2) are located in the top center of the drawing.

Hydro weir is at 1,026 ft.

Address of the owner:
LSRCP Office, USFWS
1387 S. Vinnell Way, Suite 343
Boise, Idaho 83709
Phone (208)378-5321

Address of the operator:
Idaho Dept of Fish and Game
600 S. Walnut
Boise, ID 83712
(208) 334-3700

Clearwater Fish Hatchery Address:
118 Hatchery Roe Dr
Ahsahka, ID 83520
(208) 476-3331

Hope this will answer some questions. I will continue looking for historic flow data but it will be difficult to obtain. It may have been on old data storage devices, floppies etc.

Have a good weekend-



