

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"),

**U.S. Department of the Interior  
Fish and Wildlife Service**

is authorized to discharge from the facility located at

**Pittsford National Fish Hatchery  
4 Holden Road  
North Chittenden, VT 05763**

to receiving water named

**Furnace Brook (Lake Champlain Drainage Area)**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on July 1, 2009.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit consists of 10 pages in Part I including effluent limitations and monitoring requirements and 25 pages in Part II, Standard Conditions.

**Signed this 9<sup>th</sup> day of April, 2009**

**/S/ SIGNATURE ON FILE**

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Stephen S. Perkins, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

**PART I****A. EFFLUENT LIMITS AND MONITORING REQUIREMENTS**

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial numbers <b>001, 002, 003, and 004</b> treated fish culture water to Furnace Brook. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.							
<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>				<u>MONITORING REQUIREMENTS</u>	
PARAMETER	UNITS	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	ANNUAL TOTAL	MEASUREMENT FREQUENCY	SAMPLE TYPE
FLOW	MGD	2.6	***	3.0	****	Daily <sup>1</sup>	Instantaneous
BOD <sub>5</sub>	mg/l lbs/day	***	***	10 250	**** ****	2X/Quarter <sup>2</sup>	Composite <sup>3</sup>
TSS	mg/l lbs/day	**** ****	**** ****	10 250	**** ****	2X/Quarter <sup>2</sup>	Composite <sup>3</sup>
Total Ammonia, as N	mg/l	1.6	***	6.9	****	2X/Quarter <sup>2</sup>	Composite <sup>3</sup>
Total Phosphorus, as P	lbs/yr mg/l	**** Report	**** ****	**** Report	1523 <sup>5</sup> ****	Annually <sup>5</sup> Biweekly	12-Month Total <sup>5</sup> Composite <sup>3</sup>
pH	std units	(see condition I.A.3. of this permit)				Monthly	Grab
Dissolved Oxygen	mg/l	≥ 7.0 mg/l				Daily, when formalin is in use <sup>4</sup>	Grab
Formaldehyde	mg/l	****	****	8.4	****	Daily when formalin is in use <sup>4</sup>	Grab
Total Residual Chlorine	µg/l	****	****	23	****	Daily <sup>6,7</sup>	Grab

## Footnotes:

1. Outfall numbers 001 through 004 are alternate discharge points to Furnace Brook, which are used depending on the flow pattern through the hatchery. Daily flows shall be added together from multiple outfalls when more than one is used during the day. Daily flows shall be recorded and the average monthly and maximum daily values shall be reported.
2. During each three-month period, one of the quarterly BOD, TSS, and Total Ammonia samples shall be taken immediately following a raceway cleaning and/or maintenance activity when pollutant concentrations in the discharge are likely to be at a maximum, rather than at a random operating time. The other quarterly sample for these pollutants shall be taken during normal operations when raceway cleaning is not occurring. The results of both samplings shall be reported separately on the DMRs.
3. Composite Sampling - The composite samples shall consist of at least 8 grab samples collected at approximately equal intervals during the day.
4. Sampling for dissolved oxygen and formaldehyde testing shall be conducted daily during formalin use, when effluent formaldehyde concentrations in the discharge are likely to be at maximum levels. Sampling is not required if formalin is not used. In such cases, "No Discharge" shall be reported on the Discharge Monitoring Reports.
5. Consistent with the Total Maximum Daily Load adopted September 25, 2002, the phosphorus limitation necessary to protect downstream waters is 1,523 pounds per year. The total annual phosphorus load discharged by the facility shall be reported on the January DMR each year by adding the pounds of phosphorus discharged per month for January through December of the previous year. One composite sample shall be taken for phosphorus every two weeks (biweekly). The pounds per month shall be determined using the average monthly phosphorus concentration and the total monthly flow. The composite samples for phosphorus shall be taken at appropriate times to approximate the actual average phosphorus concentration over the sampling day (neither overweighting nor underweighting times of cleaning operations or other operational changes).
6. Daily monitoring is required whenever sodium hypochlorite or any other chlorination chemicals are used in process waters or waters introduced to process waters that eventually discharge to Furnace Brook from the facility. Daily monitoring shall not be required if water which has been treated with chlorination chemicals is not introduced into the facility's discharge to Furnace Brook.
7. The minimum level (ML) for total residual chlorine is defined as 0.020 mg/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. Sample results of 0.020 mg/l or less shall be reported as zero on the discharge monitoring report.

**I.A. (Continued)**

2. The discharge shall not cause a violation of the water quality standards of the receiving waters.
3. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 standard units (SU) at any time.
4. The discharge shall not cause objectionable discoloration of the receiving waters.
5. The effluent shall not contain visible oil sheen, foam, floating solids, or settleable solids at any time.
6. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
7. The results of sampling for any parameter done more often than its required frequency in accordance with EPA approved methods must also be reported.
8. The permittee shall notify EPA and the State within 24-hours upon the occurrence of a water quality induced mortality of greater than 25 percent in any aquatic species under culture at the facility in accordance with reporting requirements in the Standard Conditions, Part II.D.1.e.
9. In accordance with 40 Code of Federal Regulations (CFR) §122.42, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
  - a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - (1) One hundred micrograms per liter (100 ug/L);
    - (2) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Vermont regulations.

- b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) Five hundred micrograms per liter (500 ug/L);
    - (2) One milligram per liter (1 mg/L) for antimony;
    - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Vermont regulations.
  - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.
10. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards, with the permittee being so notified.
  11. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - b. Controls any pollutants not limited in the permit.
  12. Any change in: 1) the fish species to be raised at this facility or, 2) the development stage to be attained at this facility, will require written notification to EPA and possible permit modification.
  13. Medications and Disease Control Chemicals
    - a. The permittee shall use only medications and disease control chemicals in dosages and combinations as included in the Best Management Practices (BMP) plan [See Part I.A.14.d.iv.] and as approved for appropriate uses by the U.S. Food and Drug Administration (USFDA), U.S. Fish and Wildlife Service (USF&WS), and EPA.
    - b. The permittee shall use these medications and chemicals as needed to treat a disease or disease-causing conditions. The prophylactic use of disease control medications is prohibited.

- c. The permittee shall notify, within 24 hours by telephone and within 5 working days in writing, the Regional Administrator at EPA-Region I and the U.S. Fish and Wildlife Service of the emergency use or the immediate intended use of any medication and/or chemical not specifically identified in the Best Management Practices Plan as described below.
- d. The Regional Administrator or the Director will notify the permittee when the use of a specific chemical described in item c., immediately above, is unacceptable or that the dosage, concentration, or frequency level must be modified to protect the aquatic community in the receiving water.

14. Best Management Practices (BMP) Plan

- a. A Best Management Practices (BMP) plan shall be developed. The plan shall identify Best Management Practices (BMPs) to be followed in operating the facility, cleaning the raceways/culture tanks, screens and other equipment and disposing of any solid waste. BMPs means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. The purpose of the plan is to identify and to describe the practices which prevent or minimize the amounts of pollutants (biological, chemical and medicinal) discharged to surface waters.
- b. The BMP plan shall be completed and signed within **90 days after the effective date** of this permit. The permittee shall certify the BMP plan has been updated and that it meets the requirements of this permit. The certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of the certification shall be sent to EPA within **120 days after the effective date** of this permit. A current copy of the plan shall be maintained at the facility.
- c. The BMP plan shall be amended as necessary and appropriate during the life of the permit. Specifically, the permittee shall amend and sign the BMP plan within **30 days following a change** in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters. The amended BMP plan shall be certified and the amended plan and certification shall be forwarded to the regulatory agencies as described in item b above within **60 days after the facility change**.
- d. The BMP Plan shall include, at a minimum, the following items:
  - i. During operations:
    - (1) A description of the pollution control equipment or methods used to enhance solids collection.
    - (2) A description of how excessive solids buildup will be identified to trigger more frequent cleaning of the raceways/culture tanks and equipment thereby preventing more suspended and dissolved materials in the discharge.

- (3) A description of feeding methods used to minimize the amount of feed residual in the discharge.
  - (4) A description of the preventative maintenance program for cleaning equipment so that delays in cleaning due to equipment failures are avoided.
  - (5) A description of the analyses and model (if one is used) used to determine the time of maximum concentration based on dosage, injection point, facility flow, etc.
- ii. Biological Pollution
- (1) Describe, in detail, the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous to the New England area and/or the United States from becoming established in the local surface waters.
  - (2) A description for storage and treatment of discharges during plant upsets to prevent biological pollution (non-native organisms, fish parasites, and fish diseases) from entering the receiving water in the case of an untreated discharge bypass.
- iii. Cleaning of culture tanks/raceways and other equipment
- (1) Describe in detail how the accumulated solids are to be removed, dewatered and methods of disposal.
  - (2) Describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any on-site storage. If the material is to be removed from the site, describe who receives the material and its method of disposal and/or reuse.
- iv. Medications and chemicals used in the facility
- (1) List in the plan all medications and chemicals that are expected to be used in the culture tanks/raceways. For each medication or chemical, identify:
    - (a) Product name of the medication or chemical.
    - (b) The chemical formulation of the medication or chemical.
    - (c) The purpose or use of the chemical.

- (d) The dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.
  - (e) The method of application.
  - (f) Material Safety Data Sheets (MSDS), Chemical Abstracts Service (CAS) Registry number for each active therapeutic ingredient.
  - (g) The method or methods used to detoxify the wastewater prior to discharge following application of chemical and/or medication.
  - (h) Information on the persistence and toxicity of each medication or chemical.
  - (i) Information on the Food and Drug Administration (USFDA) approval for the use of said medication or chemical on fish or fish related products used for human consumption.
  - (j) Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); LC<sub>50</sub> at 48 and/or 96 hours and No Observed Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).
- v. Personnel Training
- (1) Describe the training to be provided for employees to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES Permit and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit.
- vi. BMP Records Maintenance
- (1) Records of the calculations done at the time of sampling must be maintained at the facility in order that an inspector may verify that the sampling was properly conducted.

## **B. SPECIAL CONDITION -- REPRESENTATIVE SAMPLING METHOD**

The four outfalls at the Pittsford National Fish Hatchery do not currently allow for the collection of a representative sample of the total hatchery effluent when more than one outfall is discharging at the same time. Therefore, as a condition of this permit, on or before **30 days after the effective date of the permit**, the permittee shall provide a report to the US EPA which contains a method for providing a representative sample of the combined discharges from the four permitted outfalls from the fish hatchery. The representative sampling method may be achieved by: a) construction of a connecting outfall manifold so that all wastewater enters



Furnace Brook through a single sampling point; b) changes in operations so that only one outfall discharges at any one time; c) installation of composite sampling equipment on multiple outfalls which takes samples which are flow proportional by both outfall and time; or d) some other appropriate method.

The report shall also contain a plan and schedule for implementation of the representative sampling method. The plan and schedule shall result in full implementation of the representative sampling method as soon as practicable, but **not later than 120 days after the effective date of the permit.**

### **C. UNAUTHORIZED DISCHARGES**

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall(s) listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the Part II Standard Conditions of this permit (Twenty-four hour reporting).

### **D. MONITORING AND REPORTING**

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Form(s) postmarked no later than the 15<sup>th</sup> day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to EPA at the following address:

U.S. Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114-8127

Additional monitoring and recordkeeping requirements are contained in Section C of the Part II Standard Conditions of this permit. Section C includes, but is not limited to, the requirements to record: the date, exact place, and time of sampling, measurements, and analyses; the individual(s) who performed the sampling, measurements, and analyses; the analytical techniques or methods used; and the results of such analyses. Section C of Part II also includes the requirements to retain records of all monitoring information, including all data, for a period of at least 3 years from the date of the sample, measurement, report or application.

Additional reporting requirements are contained in Section D of the Part II Standard Conditions of this permit. Section D requires reporting of monitoring results on a Discharge Monitoring Report (DMR), as well as reporting within 24 hours of any noncompliance which may endanger health or the environment. Section D also requires reporting to EPA if a variety of conditions exist, including planned changes to the facility and anticipated or unanticipated noncompliance. This section also sets the signatory and public availability requirements of reports sent to EPA.

## **RESPONSE TO COMMENTS**

### **REGARDING THE ISSUANCE OF THE FOLLOWING NPDES PERMIT**

#### **U.S. DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE, PITTSFORD NATIONAL FISH HATCHERY, VT0000451**

##### **Introduction:**

The U.S. Environmental Protection Agency (EPA) solicited public comments from August 21, 2008 through September 19, 2008 on the draft National Pollutant Discharge Elimination System (NPDES) permit to be issued to the U.S. Department of the Interior Fish and Wildlife Service for its Pittsford National Fish Hatchery.

The Draft NPDES Permit is for the discharge of fish culture wastewater. The facility discharges to Furnace Brook.

During the public-notice (comment) period EPA-New England received comments from the permittee, the U.S. Department of the Interior Fish and Wildlife Service.

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft NPDES permit and any appropriate changes made to the public-noticed draft permit as a result of the comments. The final permit is substantially similar to the draft permit that was available for public comment. EPA did, however, revise certain requirements in the permit based on clarifying information provided in the submitted comments. These revisions are summarized below and are reflected in the Final Permit.

##### **Changes Incorporated into the Final Permit**

1. The Final Permit includes an effluent limit and monitoring requirement for total residual chlorine in response to the reported planned occasional use of sodium hypochlorite at the facility.
2. The Final Permit incorporates a revised effluent limit for formaldehyde to account for potential acute effects associated with the infrequent intermittent use of formalin at the facility.
3. The monitoring frequency for total phosphorus has been reduced from once per week to once per two weeks (biweekly).

**GENERAL INTRODUCTORY COMMENT submitted by the Mr. Henry Bouchard, U.S Fish and Wildlife Service:**

In general, I am glad to hear that Furnace Brook is not on Vermont's 303(d) list of the Federal Clean Water Act because the hatchery has been operating on the banks of Furnace Brook for over 100 years. There appears to be a thriving wild trout fishery in Furnace Brook.

The draft effluent limits for formaldehyde basically takes formalin out of the tool box not to mention time and money spent on the FDA approval process. The hatchery uses formalin infrequently, but it is an effective chemical when needed. Could dilution of the receiving waters be considered? I think we have used formalin two times in the past two years on the outside raceways. I give more details in the comments below.

***Response to General Comment:** EPA has considered the information provided in the comment concerning the frequency of past use of formalin at the facility, as well as how formalin is applied when used. Formalin use should be consistent with U.S. Food and Drug Administration (FDA) labeling instructions (21CFR 1 § 529.1030). Per those instructions, formalin is to be used only 1-hour per day in raceways and tanks for the treatment of finfish. Finfish eggs may be treated 15 minutes per day following FDA guidelines. Given its infrequent use at the facility (twice during a two-year period) and the limited duration over which it may be applied (no greater than 1 hour), the effluent limit in the final permit has been set to protect aquatic life in Furnace Brook from acute toxicity events.*

*The effluent limit for formaldehyde of 0.7 mg/l proposed in the draft permit is based on protecting aquatic life in Furnace Brook from chronic toxicity. Derivation of acute criteria are based on an exposure period of 1 hour, whereas, the derivation of chronic criteria are based on an exposure period of 4 days. Exceedences of acute and chronic criteria should not occur more frequently than once every three years. Since the application of formalin at the facility is limited to no more than 1 hour per day and its use is so infrequent, EPA has selected the acute threshold for formalin as the more appropriate threshold for setting the effluent limit for formaldehyde at the facility. The revised effluent limit in the final permit is based on the acute toxicity threshold for formalin of 18.6 mg/l and the available in-stream dilution factor for 7Q10 low flow conditions in Furnace Brook of 1.22. The derivation of the maximum daily effluent limit for formaldehyde in the final permit is:*

*1) Formalin contains formaldehyde at approximately 37 percent (%) by weight. Therefore, the acute threshold for formaldehyde is estimated to be 37% of the formalin acute threshold:*

$$\begin{aligned} \text{Acute formaldehyde threshold} &= (0.37) \times 18.6 \text{ mg/l} \\ &= 6.9 \text{ mg/l} \end{aligned}$$

2) *The maximum daily effluent limit for formaldehyde is calculated by multiplying the acute threshold for formaldehyde by the dilution factor for Furnace Brook:*

$$\begin{aligned} \text{Maximum daily effluent limit for formaldehyde} &= 6.9 * 1.22 \\ &= \mathbf{8.4 \text{ mg/l}} \end{aligned}$$

*A daily monitoring requirement is included in the final permit and applies for each day that formalin is used at the facility.*

### **DETAILED COMMENTS submitted by the Mr. Henry Bouchard, U.S Fish and Wildlife Service**

**Comment 1: Part I.A.5 of permit. The hatchery has no effluent treatment system and a raceways cleaning schedule is maintained to limit discharge of settleable solids.**

**Response to Comment 1:** *This information has been included in the permit file. It may be necessary for the facility to provide additional treatment to comply with the effluent limits in the final permit.*

**Comment 2:** Part I.A.7 of permit. The hatchery requests the use of sodium hypochlorite for disinfection and bio-security protocols on equipment. Requested uses are for disinfecting nets, boots, equipment and field gear with a 200 mg/l solution for 60 minutes. All solutions would be neutralized with sodium thiosulfate immediately upon completion of the disinfection process. It is not the intent of this request to use sodium hypochlorite in any rearing unit containing water or fish and/or to discharge this chemical. This hatchery practice will help prevent spread of harmful fish pathogens and invasive aquatic organisms as described in Part I.15.d.ii.of the draft permit.

**Response to Comment 2:** *The draft permit did not include proposed effluent limits for total residual chlorine (TRC). Based on this request to use sodium hypochlorite to treat equipment at the facility, the final permit includes a maximum daily effluent limit for TRC. This limit is included in the final permit to prevent occurrences of aquatic life toxicity in Furnace Brook caused by potential episodic discharges of water that has been treated with chlorination chemicals.*

*The TRC maximum daily effluent limit was derived using the Vermont acute criterion for TRC for freshwaters (19 µg/l) and the in-stream dilution factor for 7Q10 low flow conditions in Furnace Brook (1.22):*

$$\begin{aligned} \text{Maximum daily effluent limit for TRC} &= 19 \text{ µg/l} \times 1.22 \\ &= \mathbf{23 \text{ µg/l}} \end{aligned}$$

*A daily monitoring requirement is included in the final permit that applies to the facility whenever waters that have been treated with chlorination chemicals are introduced into*

*the facility's process waters that will eventually discharge from the facility. If waters that have been treated with chlorination chemicals are not introduced into the facility's process water and/or discharged to Furnace Brook then the daily monitoring requirement does not apply.*

**Comment 3:** Part I.A.13. The Pittsford National Fish Hatchery has had fish culture program changes since the site visit to facility. I would request that brook trout be added to the list of species. The hatchery's production beginning in Fall of 2008 will consist of approximately 180,000 two year old Atlantic salmon (two year classes), 95,000 one year landlocked Atlantic salmon, 45,000 brook trout and 16,000 lake trout. The annual production shall remain approximately 45,000 pounds per year.

**Response to Comment 3:** *This information has been added to the permit file.*

**Comment 4:** Fact Sheet - Effluent Limitations and Monitoring Requirements in the permit. I would like to request allowing the dilution of the receiving water, Furnace Brook, for the formaldehyde parameter. The 1.05cfs (470gpm) seven day, one in ten year, drought flow (7Q10) seems low. Could this figure be reviewed? Also, the hatchery's two well(s) run nonstop all year under the current production programs and infrastructure. The wells add 700 gpm to the total flow of Furnace Brook when both are pumped from July through April and 300gpm when one well is used in May and June. I have not seen much fluctuation in the volume of flow from the wells in the eleven plus years I've been here. If this fact could be taken into consideration, it would increase the (7Q10).

**Response to Comment 4:** *As indicated above in the Response to the General Comment and the Response to Comment 2, the final permit includes a revised effluent limit for formaldehyde and a new effluent limit for TRC that were both derived using available dilution in Furnace Brook.*

*The 7Q10 low flow used in the calculations was provided by the Vermont Department of Environmental Conservation (VTDEC) and was used by that agency in the development of the State permit issued to your facility in 2007. Most of the flow provided by the wells generally enters Furnace Brook by way of the facility as process water and is accounted for in the discharge flow. Also, the withdrawal of flows from the wells may reduce stream flow in the vicinity of the wells and therefore may diminish the 7Q10 flow. Given the uncertainties associated with the impacts of the well withdrawals on the 7Q10 low flow value for Furnace Brook, EPA has continued to use the 7Q10 flow of 1.05 cfs to calculate effluent limits in the final permit.*

**Comment 5:** Recently the State of Vermont instructed the phosphorus sampling for permit #3-1188 to not use the difference between incoming and outgoing water. This results in the phosphorus already present in Furnace Brook water contributing towards the Pittsford NFH's annual total phosphorus discharge total. I would request the difference between the two points be reported. I would like to request total phosphorus sampling frequency reduced to biweekly. The increase in fish biomass increases slowly

during the month and fish feeding regimes are adjusted monthly. During the last year test results have averaged 0.045mg/l with a range of 0.002mg/l - 0.26mg/l. I feel biweekly testing would still give accurate information regarding total phosphorus discharge from the Pittsford NFH.

**Response to Comment 5:** *The annual phosphorus load effluent limitation of 1,523 pounds per year for the Pittsford NFH facility is based on a wasteload allocation (WLA) for the Pittsford NFH discharge specified in the approved phosphorus Total Maximum Daily Load (TMDL) established for Lake Champlain. A WLA allocates the allowable amount of a pollutant, in this case phosphorus, which can be discharged from a permitted point source. Permitting regulations CFR §122.44 (d) (vii)(B) require that a NPDES permit for a given discharge(s) establish effluent limitations that are consistent with any WLA established for that discharge(s). The WLA addresses only what may be discharged from a facility and therefore, does not distinguish among contributing sources of the pollutant to the discharge. Consequently, the final permit does not include a requirement to monitor the influent for phosphorus. However, the Pittsford NFH may elect to monitor the facility's influent for phosphorus. This information may become useful in setting WLAs should VTDEC decide in the future to re-establish the Lake Champlain phosphorus TMDL.*

*Based on the total phosphorus monitoring results that have been summarized, EPA has reduced the required monitoring frequency for total phosphorus from once per week to once per two weeks. Given the levels reported, a biweekly frequency is expected to be sufficient to evaluate compliance with the annual load limitation.*

**Comment 6:** The formaldehyde limit of 0.7mg/l on the draft essentially excludes the use of the chemical at the Pittsford NFH unless the discharge limit can be increased or dilution with receiving waters can be included. After reviewing Bills et al.1977, the two Ictalurid species (LC50 of 62.1ppm) referenced in the permit draft were the most sensitive to formalin and are not present in the receiving waters of the Pittsford NFH. In this case, the use of rainbow trout (LC50 of 118ppm) from this manuscript would be more accurate for estimating toxicity levels of formalin in Furnace Brook. The fish population of Furnace Brook near the hatchery consists only of brook, brown and rainbow trout and sculpin. Also of note, is that the LC 50s referenced are after 96 hours. FDA labeling permits the use of formalin for one hour up to 250ppm and Bills et al. 1977 reports the LC50 for rainbow trout is at least >1210ppm from the different pH and temperatures tested.

**Response to Comment 6:** See Response to General Comment above.