



6. Current permit coverage:    yes     no

- a) Has a prior NPDES permit (individual or general permit coverage) been granted for the discharge that is listed on the NOI?    yes     no     If Yes, permit number MAG250003
- b) Is the facility covered by an individual NPDES permit for other discharges?    yes     no   
If yes, Permit Number: \_\_\_\_\_
- c) Is there a pending NPDES application on file with EPA for this discharge?    yes     no   
If yes, date of submittal: \_\_\_\_\_ and permit number, if available \_\_\_\_\_

7. Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water.

**B. Map attached?  Discharge Information** (attach additional sheets as needed):

1. Name of receiving water into which discharge will occur: Hobbs Brook  
 Freshwater  Marine Water  ;    State Water Quality Classification Class \_\_\_\_\_  
 Type of Receiving Water Body (e.g., stream, river, lake, reservoir, estuary, etc.) stream

2. Attach a line drawing or flow schematic showing water flow through the facility including sources of intake water, operations contributing to flow, treatment units, outfalls, and receiving water(s).

**Line drawing or flow diagram attached?**

3. Describe the discharge activities for which the owner/applicant is seeking coverage (e.g., building cooling, process line cooling, etc.) Non-contact cooling water

4. Number of Outfalls 2    Latitude and Longitude to the nearest second for each Outfall. See EPA's siting tool at <https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools>. Attach additional pages if necessary.

Outfall #	Latitude <u>42-06-32</u>	Longitude <u>72-04-10</u>
Outfall #	Latitude <u>42-06-32</u>	Longitude <u>72-04-10</u>
Outfall #	Latitude _____	Longitude _____

5. For each Outfall provide the following discharge information:

Outfall # 1

- a) Maximum Daily Flow 0.007 MGD    Average Monthly Flow 0.0065 MGD  
**NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.**
- b) Maximum Daily Temperature 70 °F    Average Monthly Temperature 60 °F
- c) Maximum Monthly pH 8.3 s.u.    Minimum Monthly pH 6.5 s.u.
- d) Outfall's discharge is:    continuous     intermittent     seasonal

Outfall # 2

- a) Maximum Daily Flow 0.007 MGD    Average Monthly Flow 0.0065 MGD  
**NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.**
- b) Maximum Daily Temperature 70 °F    Average Monthly Temperature 60 °F
- c) Maximum Monthly pH 8.3 s.u.    Minimum Monthly pH 6.5 s.u.
- d) Outfall's discharge is:    continuous     intermittent     seasonal

Outfall # \_\_\_\_\_

a) Maximum Daily Flow \_\_\_\_\_ MGD      Average Monthly Flow \_\_\_\_\_ MGD

**NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.**

b) Maximum Daily Temperature \_\_\_\_\_ °F      Average Monthly Temperature \_\_\_\_\_ °F

c) Maximum Monthly pH \_\_\_\_\_ s.u.      Minimum Monthly pH \_\_\_\_\_ s.u.

d) Outfall's discharge is: continuous  intermittent  seasonal

6. Is the source of the NCCW potable water?    yes  no

If yes, EPA will calculate a Total Residual Chlorine effluent limit for your facility.

7. Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.0084 MGD

Attach any calculation sheets used to support stream flow and/or dilution calculations.

**8. For facilities that discharge to Massachusetts surface waters:**

a) Submit the completed engineering calculation of the surface water temperature rise as shown in Attachment B of the General Permit. Calculation attached?

b) Does the discharge occur in an Area of Critical Environmental Concern (ACEC)?    yes  no

If yes, provide the name of ACEC \_\_\_\_\_

c) Does the discharge occur to an Outstanding Resource Water (ORW)?    yes  no

If yes, enclose antidegradation waiver approval provided by MassDEP.

**Note: See Appendix 1 of the General Permit for more information on ACEC.**

**C. Chemical Additives**

1. Are any non-toxic neutralization and/or dechlorination chemicals used in the discharge(s)?    yes  no

2. If yes, attach a list of each chemical used and include the chemical name and manufacturer; maximum and average daily quantity used on a monthly basis, as well as the maximum and average daily expected concentrations (mg/L) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC<sub>50</sub> in percent for typically acceptable aquatic organism).

3. Was this list submitted with the facility's 2014 NCCWGP NOI?    yes  no

**D. NCCW Source Water Information**

1. State the source of the NCCW (e.g., municipal water supply, private well, surface water withdrawal, etc.).

Source municipal water supply      Name of Source Water Sturbridge, MA

2. Is the source water registered/permitted under MA Water Management Act or NHDES User Registration Rule (ENV WQ 2202)?    yes  no       If yes, registration number \_\_\_\_\_

3. If the source water is groundwater (non-municipal well water), see Appendix 9 of the General Permit and submit effluent (and receiving water hardness) test results, as required in Part 5.4 of the General Permit.

**Test results attached?**

4. Does the facility use both a primary and backup source of NCCW?    yes  no     If yes, **attach information** that identifies and describes the primary and backup sources of NCCW and how often any backup supply was used in the past five years.

**E. Best Technology Available for Cooling Water Intake Structures (CWISs)**

If the facility's non-contact cooling water discharge is covered by this General Permit and the facility **withdraws water from a surface water**, it is subject to the BTA requirements at Part 4.2 of the General Permit.

1. Are you subject to the BTA requirements of the General Permit?      yes       no
- a) If no, explain not applicable and skip to F.
- b) If yes, submit a facility-specific BTA description that accurately describes the facility's operations and practices, including, but not limited to, the measures described in Part 5.5 of the General Permit. For additional information and guidance, see Section IV of the Fact Sheet.

Include in your description:

- a) Measures to meet the General Permit Part 4.2.1 general BTA requirements, including documentation that describes the facility's monitoring program for impinged fish and/or invertebrates; or the required alternative monitoring plan frequency and/or protocol.
- b) The attributes of the current CWIS.
- c) The design measures of the CWIS.
- d) The operational measures of the CWIS.
- e) The historical occurrence of impinged fish for the past five years.
- f) If applicable, a demonstration that the facility's intake rate is commensurate with a closed-cycle recirculation system.
- g) Other components to reduce impingement and/or entrainment of aquatic life.

2. Provide the following information for each CWIS to support your attached facility-specific BTA description:

- a) The design capacity of the of the CWIS \_\_\_\_\_MGD
- b) Maximum monthly average intake of the CWIS during the previous five years \_\_\_\_\_MGD
- c) The month and year in which this flow reported in 2.b. occurred \_\_\_\_\_
- d) The maximum through-screen design intake velocity \_\_\_\_\_feet/second (fps)

3. For facilities where the CWIS is located on a freshwater river or stream, provide the following information:

- a) The source water's annual mean flow in MGD as available from USGS or other appropriate source \_\_\_\_\_MGD
- b) The design intake flow as a % of the source water's annual mean flow \_\_\_\_\_%  
Attach calculations if equal to or less than 5% of annual mean flow.
- c) The source water's 7Q10 \_\_\_\_\_MGD
- d) The design intake flow as a percent of the source water's 7Q10 \_\_\_\_\_%

4. Provide a map showing the location of each cooling water intake structure; NCCW Outfall(s) and CWIS features referred to in the BTA description. **Map attached?**

**F. Endangered Species Act Eligibility Information**

If your facility is listed in Table A as one of the 37 facilities covered under the 2014 NCCW GP, check this box.  Your ESA consultation responsibilities have been satisfied by EPA. Proceed to Part G.

If your facility is not included as one of the 37 facilities covered under the 2014 NCCW GP, complete this Part.

Using the instructions in Appendix 2, Parts B(1) and B(2) of the NCCW GP, which of the following criteria apply to your facility?

United States Fish and Wildlife Service (USFWS) Criteria: A  B  C

National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) Criteria: A  B  C

1. If you selected USFWS criterion B, has consultation with the USFWS been completed? yes  no   
 If you selected NOAA Fisheries criterion B, has consultation with NOAA Fisheries been completed?  
 yes  no

2. If consultation with USFWS and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is “not likely to adversely affect” listed species or critical habitat received?  
 USFWS yes  no  N/A  NOAA Fisheries yes  no  N/A

3. Attach documentation of ESA eligibility for USFWS and NOAA Fisheries as required at Appendix 2, Part C. of the General Permit. **Documentation attached?** USFWS  NOAA Fisheries

4. Please indicate if your facility **directly intakes water for non-contact cooling from, or discharges any NCCW effluent to**, any of the following waterbodies:

- Merrimack River
- Connecticut River
- Westfield River
- Deerfield River
- Piscataqua River
- Salmon Falls River
- Cocheco River
- Taunton River

EPA will consult with NOAA Fisheries on any cooling water intakes or discharges covered under this permit in areas (in the above waterbodies) that overlap with the presence of shortnose sturgeon (endangered) and Atlantic sturgeon (threatened/endangered).

Please indicate if your facility **directly intakes water for non-contact cooling from, or discharges non-contact cooling water effluent to**, the Connecticut River Watershed. EPA will consult with the U.S Fish and Wildlife Service on cooling water intakes and discharges covered under this permit in areas of the Connecticut River Watershed that overlap with the presence of the dwarf wedgemussel (endangered).  
 yes  no

**G. National Historic Properties Act Eligibility**

1. Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? yes  no

2. Have any State or Tribal Historic Preservation Officers been consulted in this determination? yes  no   
 If yes, attach the results of the consultation(s).

3. Which of the three National Historic Preservation Act scenarios listed in Appendix 3, Section C has the facility met?  
 1  2  3

**H. Supplemental Information**

Please provide any supplemental information, including antidegradation review information applicable to new or increased discharges. Attach any analytical data used to support the application. Attach any certification(s) required by the General Permit.

**I. Signature Requirements**

The NOI must be signed by the operator in accordance with the signatory requirements of 40 CFR§ 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the noncontact cooling water (NCCW) system; (2) the discharge consists solely of NCCW (to reduce temperature) and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product (other than heat) or finished product; (4) if the discharge of noncontact cooling water subsequently mixes with other wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for noncontact cooling water; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

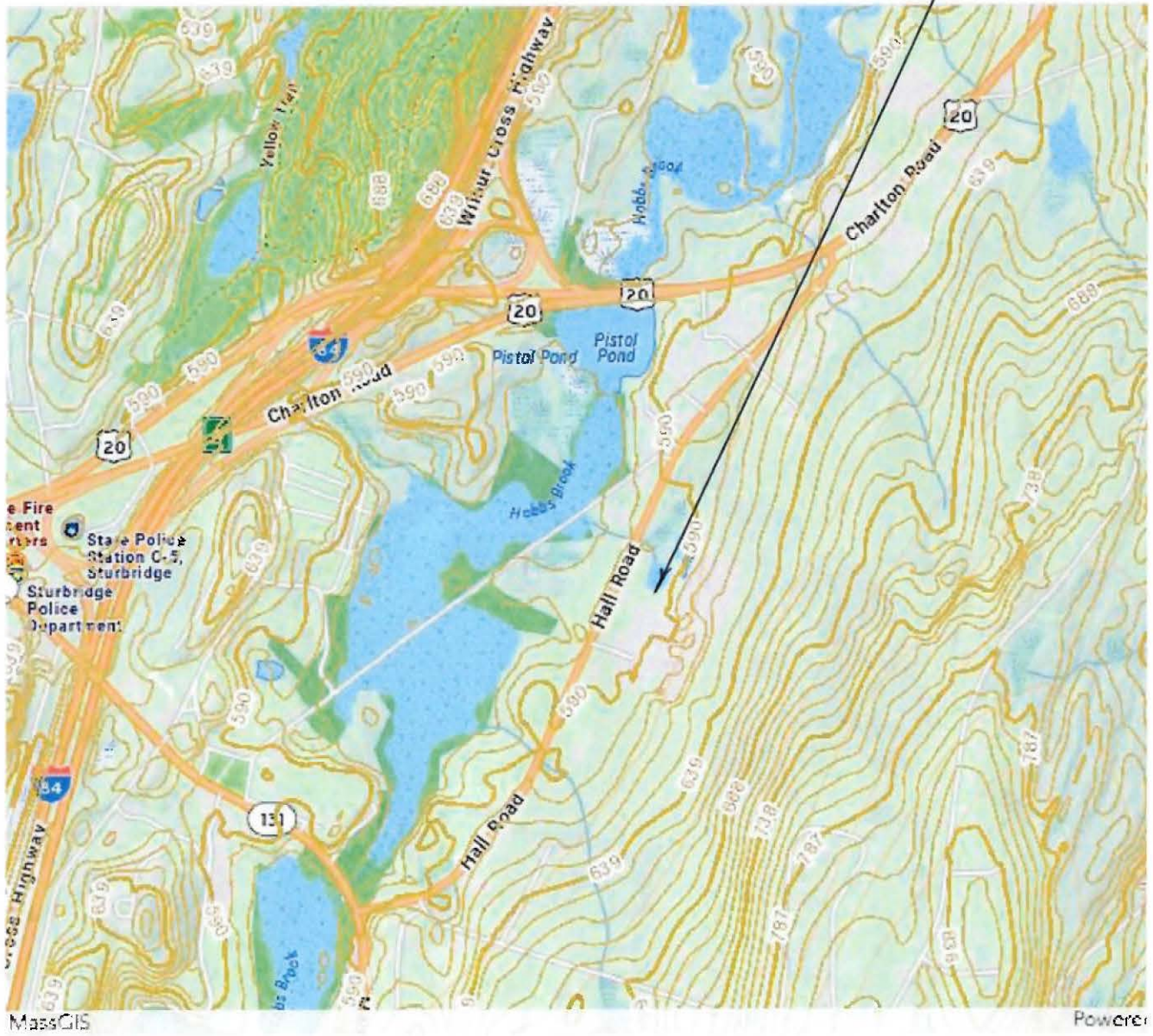
Signature  Date 05/31/2024  
Printed Name and Title Paul Watson, Environmental Regulatory Compliance Engineer

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

# Topographic Map

Location of Facility and Outfalls



Topographic Map  
(Showing detail of outfall location)

Location of Facility and Outfalls



Upstream  
Temperature  
Monitoring  
Point

Downstream  
Temperature  
Monitoring  
Point





**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection – Watershed Permitting Program  
**BRP WM 11**  
 Request for General Permit Coverage  
 Surface Water Discharge Of Non-Contact Cooling Water

W 060105  
 Transmittal Number

Date Received \_\_\_\_\_

**A. Facility Information**

**Important:**  
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Project owner:

OFS FIBER, LLC  
 Name  
50 HALL RD.  
 Street Address/PO Box  
MA  
 State  
BUD MASTALERZ  
 Contact Person  
STURBRIDGE  
 City  
01566  
 Zip Code  
508-347-8514  
 Telephone Number

2. Project operator (if different from above):

SAMZ  
 Name  
 \_\_\_\_\_  
 Street/PO Box: City  
 \_\_\_\_\_  
 State Zip Code  
 \_\_\_\_\_  
 Contact Person Telephone Number  
 \_\_\_\_\_

3. Facility data (attach topographic map or other map showing facility location):

OFS FIBER, LLC  
 Name  
50 HALL RD  
 Street/ PO Box  
STURBRIDGE  
 City  
MA 01566  
 State Zip Code  
BMASTALE@OFSOPTICS.COM  
 Email address (optional)  
508-347-8514  
 Telephone Number  
BUD MASTALERZ  
 Contact Person

4. Standard Industrial Codes (SIC) and description:

3229  
 Standard Industrial Code (SIC)  
 \_\_\_\_\_  
 Description  
OPTICAL FIBER MFG.

**B. Effluent Characteristics**

Refer to general permit in Federal Register Volume 65, Number 80, April 25, 2000, page 24195-24211:

	Average Monthly	Maximum Daily
Flow, gpd [ $< 1$ MGD]	<u>0.0864 MGD</u>	<u>0.096 MGD</u>

— 2008 REAPPLICATION —  
 MA DEP COPY



Massachusetts Department of Environmental Protection  
 Bureau of Resource Protection – Watershed Permitting Program  
**BRP WM 11**  
 Request for General Permit Coverage  
 Surface Water Discharge Of Non-Contact Cooling Water

W060105  
 Transmittal Number

\_\_\_\_\_  
 Date Received

**B. Effluent Characteristics (cont.)**

	Average Monthly	Maximum Daily
Temperature	<u>60°F</u>	<u>70°F</u>
[Warm water fishery must be <83°F (28.3°C)]		
[Cold water fishery effluents must be < 68°F (20°C)]		
pH (freshwater 6.5-8.3, saltwater 6.5-8.5)	<u>6.5</u>	<u>8.3</u>
Latitude/ Longitude:	<u>72-04-10/42-06-32</u>	

Total Residual Chlorine (for potable water supply source only):  
0.5 PPM

Water source of non-contact cooling water (e.g., municipal, stream withdrawal):  
TOWN OF STURBRIDGE MUNICIPAL SYSTEM

Receiving waterbody:  
UNNAMED BROOK TRIBUTARY OF HOBBS BROOK

**C. Certifications**

- The applicant certifies that the discharge consists solely of non-contact cooling water to reduce temperature, and does not come in direct contact with any raw materials, intermediate product, waste product (other than heat), or finished product.  
 Yes       No
- The applicant certifies that no biocides or other chemical additives for any purpose are used in the non-contact cooling water.  
 Yes       No

I certify that the discharge for which I am seeking coverage under the general permit consists solely of non-contact cooling water. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on inquiry of the persons or persons directly responsible for gathering the information, I certify that the information is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: [Handwritten Signature]  
 Printed Name and Title: BOGDAN MASTALERZ  
 Date: 9/29/08



Enter your transmittal number

W060105  
Transmittal Number

Your unique Transmittal Number can be accessed online: <http://www.mass.gov/dep/counter/trasmfrm.shtml> or call DEP's InfoLine at 617-338-2255 or 800-462-0444 (from 508, 781, and 978 area codes).

### Massachusetts Department of Environmental Protection Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. Copy 2 must accompany your fee payment. Copy 3 should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

DEP  
P.O. Box 4062  
Boston, MA  
02211

\* Note:  
For BWSC Permits,  
enter the LSP.

#### A. Permit Information

BRP WM 11

1. Permit Code: 7 or 8 character code from permit instructions

Non-Contact cooling water discharge

3. Type of Project or Activity

Request for General Permit Coverage: Surface Water Discharge of Non-Contact Cooling Water

#### B. Applicant Information - Firm or Individual

OFS Fitel, LLC

1. Name of Firm - Or, if party needing this approval is an individual enter name below:

2. Last Name of Individual

50 Hall Road

5. Street Address

Sturbridge

6. City/Town

Bogdan Mastalerz

11. Contact Person

3. First Name of Individual

MA

7. State

01566

8. Zip Code

508-347-8514

9. Telephone #

4. MI

10. Ext. #

12. e-mail address (optional)

#### C. Facility, Site or Individual Requiring Approval

OFS Fitel, LLC

1. Name of Facility, Site Or Individual

50 Hall Road

2. Street Address

Sturbridge

3. City/Town

MA

4. State

01566

5. Zip Code

508-347-8514

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

#### D. Application Prepared by (if different from Section B)\*

Josti Associates

1. Name of Firm Or Individual

77 Indian Head Road

2. Address

Framingham

3. City/Town

John J. Josti

8. Contact Person

MA

4. State

01701

5. Zip Code

508-872-6114

6. Telephone #

7. Ext. #

9. LSP Number (BWSC Permits only)

#### E. Permit - Project Coordination

1. Is this project subject to MEPA review?  yes  no  
If yes, enter the project's EOE file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

#### F. Amount Due

##### Special Provisions:

- Fee Exempt (city, town or municipal housing authority)(state agency if fee is \$100 or less).  
*There are no fee exemptions for BWSC permits, regardless of applicant status.*
- Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
- Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
- Homeowner (according to 310 CMR 4.02).

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

099863  
Check Number

385.00  
Dollar Amount

Date

2/17/05

Location of Discharge



OFS Fitel, LLC  
Sturbridge, Massachusetts

Location Plan

Josti Associates  
Framingham, Massachusetts

OFS Fitel  
 Noncontact Cooling Water Discharge  
 Engineering Calculations for Temperature

ATTACHMENT A.

1. Maximum temperature differential would occur in the winter, Hobb Brook temperature is 36 F
2. Maximum discharge temperature 70 f
3. minimum air Temperature 40 f

Discharge flows through a small pond before discharge to Hobbs Brook.  
 Heat loss in the pond by natural convection and radiation is calculated below:

Convection:  $\text{Btu/sq ft hr} = C(\Delta T)^{1.266}/(d)^{0.2}(T_{\text{avg}})^{0.181}$

C: shape factor, 1.79 for horizontal surface

d: width of surface in inches 12 inches

Tavg: average of the absolute surface and ambient air temperature in degrees R, 515

Btu/sq ft hr                      26.07445

Radiation:  $\text{Btu/sq ft} = 0.173 * e * ((T1/100)^4 - (T2/100)^4)$

e: Emissivity ratio, Assumed 0.90

T1: Temperature water degrees Rankine

T2: Temperature air degrees Rankine

Btu/sq ft hour                      25.54229

Total heat loss:                      51.61674

Area of pond: 12,000 sqft

12375

Heat dissipated in pond: Btu/hr    619400.9

Heat in discharge Btu/hr =  $C * M * T$

C: Heat capacity of water, 1.0 F\*Btu/lb

M: Mass of discharge in lbs, 60 gpm

T: temperature of discharge, 70 F

Btu/hr                                       $70 * 60 * 8.34 * 60 = 2,101,680$

Temperature of discharge after heat dissipated in pond

$$T = (Hpl - Hpd) / (C * M)$$

C: Heat capacity of water: 1.0 F\*Btu/lb

M: Mass of plant discharge in lb/hr, 30,024 lbs/hr

T: Temperature of plant discharge after pond

Hpl: Heat in plant discharge, 2,101,680 Btus/hr

Hpd; Heat lost in pond, 619,400 Btus/hr

Plant discharge temperature after pond:  $(2101680 - 619400) / 30024 = 49.4 \text{ F}$

Hobbs Brook temperature after mixing of discharge:  $T_{ba} = (T_b * M_b + T_p * M_p) / (M_b + M_p)$

T<sub>ba</sub>: Temperature in Brook after mixing

T<sub>b</sub>: Temperature in Brook before mixing, assumed 36.0 F

M<sub>b</sub>: Mass of plant discharge in lbs/hr, 30,024 lbs/hr

M<sub>b</sub>: Mass of brook flow 7Q10, 29,203 lbs/hr

Temperature in brook after mixing =  $(36 * 29203 + 49.4 * 30024) / (29203 + 30024) = 42.8 \text{ F}$

Change in Brook Temperature =  $T_b - T_{ba}$

Change in Brook temperature:  $42.8 - 36.0 = 6.8 \text{ degrees F}$

# StreamStats

## Streamflow Statistics Report

HOBBS Brook

Date: Thu Aug 14 2008 10:49:39

Site Location: Massachusetts

Drainage Area: 5.45 mi<sup>2</sup>

Latitude (NAD83): 42.1125 (42 06 44)

Longitude (NAD83): -72.0712 (-72 04 16)

Low Flow Basin Characteristics			
100% Statewide Low Flow (5.45 mi <sup>2</sup> )			
Parameter	Value	Min	Max
Drainage Area (square miles)	5.45	1.61	149
Mean Basin Slope from 250K DEM (percent)	3.95	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.052	0	1.29
Massachusetts Region (dimensionless)	0	0	1

Streamflow Statistics					
Statistic	Flow (ft <sup>3</sup> /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	5.38	18		2.72	10.6
D60	3.59	20		0.2	65
D70	1.9	24		0.16	22.6
D75	1.41	26		0.14	14.3
D80	1.08	28		0.44	2.62
D85	0.79	32		0.31	1.98
D90	0.55	37		0.21	1.45
D95	0.33	46		0.11	0.93
D98	0.2	60		0.0582	0.65
D99	0.15	65		0.0402	0.5
Low-Flow Statistics					
M7D2Y	0.34	50		0.11	1.01
AUGD50	0.82	33		0.32	2.06
M7D10Y	0.13	71		0.0323	0.47

# ATTACHMENT B

OFS Fitel

NCCW NOI

Dilution Calculations

Dilution Factor

$$Q_r + (Q_p \times 1.55) / Q_p \times 1.55$$

$$Q_r = 7Q10 \text{ Flow} = 0.13 \text{ cfs} = 0.00840 \text{ million gal./day}$$

$$Q_p = \text{Plant NCCW Discharge} = 0.086 \text{ mgd}$$

$$0.13 + (0.086 \times 1.55) / 0.086 \times 1.55 = 1.98 \text{ Dilution Factor}$$



**OFS Fitel**  
**NCCW NOI**

**Dilution Calculation**

Seven Day-Ten Year Low Flow of Receiving Water:

$$Q_r = 7Q_{10} = 0.13 \text{ cfs}$$

Conversion for cfs to mgd: 0.645 mgd/cfs

$$Q_r = (0.13 \text{ cfs}) * (0.645 \text{ mgd/cfs}) = 0.08385 \text{ mgd}$$

Plant Discharge:

$$Q_p = \text{Plant NCCW Discharge} = 0.007 \text{ mgd}$$

Dilution Factor:

$$\text{Dilution Factor} = (Q_r + Q_p) / Q_p$$

$$\text{Dilution Factor} = (0.08385 \text{ mgd} + 0.007 \text{ mgd}) / 0.007 \text{ mgd}$$

$$\text{Dilution Factor} = 13$$