

10/8/08 received

APPENDIX 5

Suggested Form for Notice of Intent (NOI) for the Noncontact Cooling Water General Permit

1. General facility information. Please provide the following information about the facility.

a) Name of facility: <u>OFS FITEL, LLC</u>		Type of Business: <u>OPTICAL FIBER MFG</u>
Facility Location Address : <u>50 HALL RD. STURBRIDGE, MA 01566</u> longitude: <u>42-06-32</u> latitude: <u>72-04-10</u>	Facility SIC codes: <u>3229</u>	Facility Mailing Address (if not location address)
b) Name of facility owner: <u>OFS FITEL, LLC</u>		Email address of owner: <u>BMASTALE@OFSOPTICS.COM</u>
Owner's Tel #: <u>508-347-8514</u>	Owner's Fax #: <u>508-347-4114</u>	Owner is (check one): 1. Federal ___ 2. State ___ 3. Tribal ___ 4. Private <input checked="" type="checkbox"/> 4. Other ___ (Describe)
Address of owner (if different from facility address) <u>SAME</u>		
Legal name of Operator, if not owner: <u>NA</u>		
Operator Contact Name: <u>NA</u>		
Operator Tel Number: <u>NA</u> Fax Number: _____		
Operator's email: <u>NA</u>		
Operator Address (if different from owner)		
d) Attach topographic map indicating the locations of the facility and the receiving water; all NCCW discharge points; upstream and downstream monitoring points. Map attached? _____		
e) Check Yes or No for the following:		
1. Has a prior NPDES permit been granted for the discharge? Yes <input checked="" type="checkbox"/> No ___ If Yes, Permit Number: <u>MAG250003</u>		
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes ___ No <input checked="" type="checkbox"/>		
3. Is the facility covered by an individual NPDES permit? Yes ___ No <input checked="" type="checkbox"/> If Yes, Permit Number _____		
4. Is there a pending application on file with EPA for this discharge? Yes ___ No <input checked="" type="checkbox"/> If Yes, date of submittal: _____		

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

- a) Name of receiving water into which discharge will occur: HOBBS BROOK
 State Water Quality Classification: B Freshwater: YES Marine Water: NO
- b) Describe the discharge activities for which the owner/applicant is seeking coverage: NON CONTACT COOLING WATER DISCHARGE
- c) FOR MASSACHUSETTS FACILITIES ONLY: Engineering Calculations: Submit the completed engineering calculation of the surface water temperature rise as shown in Attachment A of the General Permit. Check if attached: ✓
- d) Number of outfalls 2

For each outfall:

- e) What is the maximum daily and average monthly flow of the discharge? Note that EPA will use the flow reported here as the facility's permitted effluent flow limit. Max Daily Flow 48,000 GPD Average Flow 43,200 GPD
48,000 43,200
- f) What is the maximum daily and average monthly temperature of the discharge (in degrees F)? Max Temp. 70 Average Temp. 60
- g) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.3 Min pH 6.5
8.3 6.5
- h) FOR MASSACHUSETTS FACILITIES ONLY: Is the source water of the NCCW potable water? Yes X No _____ If Yes, EPA will calculate the Total Residual Chlorine limit for facilities located in Massachusetts.
- i) Is the discharge continuous? Yes _____ No X If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) I
 If (P), number of days or months per year of the discharge _____ and the specific months of discharge _____;
 If (I), number of days/year there is a discharge 10
- j) Latitude and longitude of each discharge within 100 feet: outfall 1: long. 72-06-32 lat. 72-04-10; outfall 2: long. 72-06-32 lat. 72-04-10
 outfall 3: long. NA lat. _____ (See http://www.epa.gov/tri/report/siting_tool)
- k) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.013 cfs
 Please attach any calculation sheets used to support stream flow and dilution calculations. See General Permit Attachment B for equations and additional information.

MASSACHUSETTS FACILITIES: See Part 3.4 and Appendix 1 of the General Permit for more information on ACEC.
 Areas of Critical Environmental Concern (ACEC): Does the discharge occur in an ACEC? Yes _____ No X
 If yes, provide the name of the ACEC: _____

3. NCCW Source Water Information. Please provide information about the NCCW source water, using separate sheets as necessary:

<p>a) Indicate source of the NCCW (i.e., municipal water supply, private well, surface water withdrawal, groundwater): Source: <u>MUNICIPAL WATER SUPPLY</u> Name of Source Water: <u>STURBRIDGE, MA</u></p> <hr/> <p>Is the source registered/permitted under MA Water Management Act or NHDES Water User Registration Rule (Env Wq 2202)? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, registration number: _____</p>	<p>b) If source water is surface water:</p> <p>i) Is it a freshwater river or stream Yes <input type="checkbox"/> No <input type="checkbox"/> ii) Is it a lake? _____ reservoir? _____ iii) Is it tidal river? _____ estuary? _____ ocean? _____</p> <p>c) Is the source water groundwater? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, see Appendix 8 and submit effluent and surface water test results, as required in Part 5.4 of the General Permit.</p> <p>d) Does the facility use both a primary and backup source of noncontact cooling water? Yes _____ No <input checked="" type="checkbox"/></p> <p>If yes, attach information that identifies and explains the primary and backup sources of noncontact cooling water for and how often the backup supply was used in last three years.</p>
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4. Best Technology Available for CWIS

Are you subject to BTA requirements at Part 4.2 of the General Permit? (Facility's discharge is covered by this General Permit and the facility withdraws noncontact cooling water from surface source water). Yes No If No, explain:

If YES, attach the facility-specific BTA description as required in Part 4.3 of the General Permit. For additional information and guidance, see Questions 13-23 of the NCCW Fact Sheet, posted at <http://www.epa.gov/region1/npdes/nccwgp.html>. Provide a map showing the location of each CWIS intake structure; NCCW outfall(s) and any CWIS feature referred to in the BTA description.

Include in your description:

- _____ Measures to meet the General Permit Part 4.3.a general BTA requirements, including documentation that describes the facility's monitoring program for impinged fish and/or invertebrate; or the required alternative monitoring plan frequency and/or protocol
- _____ A characterization of the source water body's aquatic life habitat in the vicinity of each CWIS during the seasons when the CWIS may be in use
- _____ The attributes of the current CWIS
- _____ Design measures of the CWIS
- _____ Operation measures of the CWIS
- _____ Historical occurrence of impinged fish for the past five years
- _____ If applicable, a demonstration that the facility's intake rate is commensurate with a closed-cycle recirculation system
- _____ Other components to reduce impingement and/or entrainment of aquatic life

4. BTA FOR CWIS CONTINUED:

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

Design capacity of the of the CWIS _____MGD

Maximum monthly average intake of the CWIS during the previous five years _____MGD Month in which this flow occurred _____

Maximum through-screen design intake velocity _____feet/second (fps)

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

The source water's annual mean flow _____cubic feet/second (cfs) as available from USGS or other appropriate source

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.

The source water's 7Q10 _____cfs. See Attachment B of the General Permit for more information on 7Q10 determinations.

The design intake flow as a percent of the source water's 7Q10 _____

5. Contaminant Information

If applicable, attach a listing of all non-toxic pH neutralization and/or dechlorination chemicals used, including chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the NCCW discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for aquatic organism(s)).

6. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendix 2, Part C, Step 4, of the General Permit. In addition, respond to the following questions.

- a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes ___ No
- b) Has any consultation with the federal services been completed? Yes ___ No
- c) Is consultation underway? Yes ___ No
- d) What were the results of the consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service (check one):
a "no jeopardy" opinion ___ or written concurrence ___ on a finding that the discharges are not likely to adversely affect any endangered species or
- e) Which of the five eligibility criteria listed in Appendix 2, Section B (A,B,C,D or E) have you met? A
- f) Attach a copy of the most current federal listing of endangered and threatened species from the USF&W web site listed in Appendices 2, 2.1 and 4

7. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

- a) 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
- b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes ___ or No If yes, attach the results of the consultation(s).
- c) Which of the three National Historic Preservation Act requirements listed in Appendix 3, Section C (1,2 o3) have you met? 1

8. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

9. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

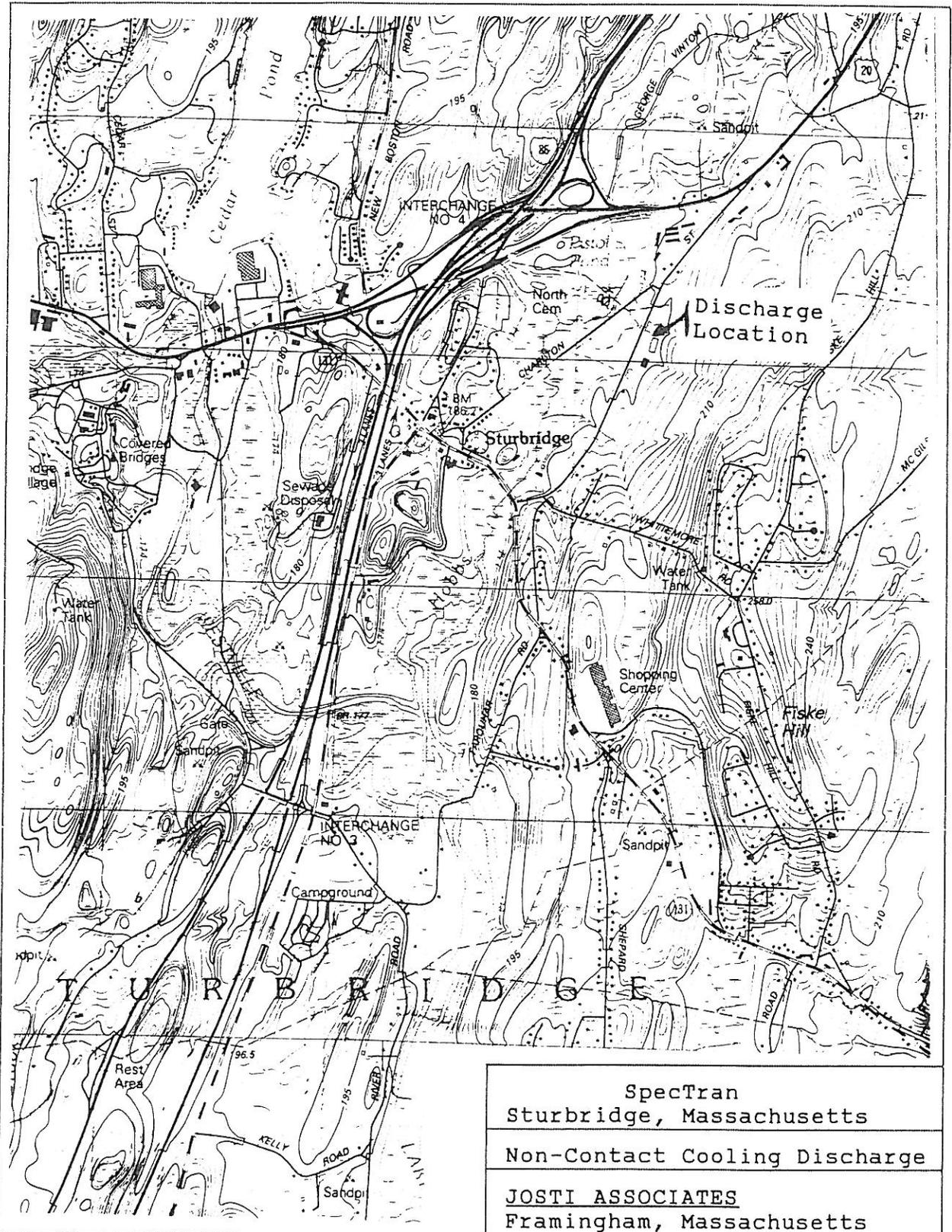
I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the noncontact cooling water (NCCW) system; (2) the discharge consists solely of NCCW (to reduce temperature) and authorized pH adjustment and/or dechlorination 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 fine and imprisonment for knowing violations.

Facility Name:	OFS FITEL, LLC.
Operator signature:	
Title:	EH+S mgr.
Date:	9/17/08

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.



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:

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

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

$$\text{Btu/sq ft hr} \quad 26.07445$$

$$\text{Radiation: } \text{Btu/sq ft} = 0.173 * e * ((T_1/100)^4 - (T_2/100)^4)$$

e: Emissivity ratio, Assumed 0.90

T1: Temperature water degrees Rankine

T2: Temperature air degrees Rankine

$$\text{Btu/sq ft hour} \quad 25.54229$$

$$\text{Total heat loss:} \quad 51.61674$$

Area of pond: 12,000 sqft

12375

$$\text{Heat dissipated in pond: Btu/hr} \quad 619400.9$$

$$\text{Heat in discharge Btu/hr} = C * M * T$$

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

M: Mass of discharge in lbs, 60 gpm

T: temperature of discharge, 70 F

$$\text{Btu/hr} \quad 70 * 60 * 8.34 * 60 = 2,101,680$$

Temperature of discharge after heat dissipated in pond

$$T = (H_{pl} - H_{pd}) / (C * M)$$

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

H_{pl}: Heat in plant discharge, 2,101,680 Btus/hr

H_{pd}: 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_{ba}: Temperature in Brook after mixing

T_b: Temperature in Brook before mixing, assumed 36.0 F

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

M_p: 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 degrees F



StreamStats

Streamflow Statistics Report

HOBBS Brook

Date: Thu Aug 14 2008 10:49:39

Site Location: Massachusetts

Drainage Area: 5.45 mi²

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 ²)			
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 ³ /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

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

$$Q_r = 7Q10 \text{ Flow} = 0.13 \text{ cfs}$$

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

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



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Watershed Permitting Program
BRP WM 11

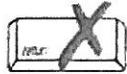
W 060105
 Transmittal Number

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

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:

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

2. Project operator (if different from above):

Name SAMR
 Street/PO Box: _____ City _____
 State _____ Zip Code _____
 Contact Person _____ Telephone Number _____

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

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

4. Standard Industrial Codes (SIC) and description:

Standard Industrial Code (SIC) 3229
 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>



BRP WM 11

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

Date Received

B. Effluent Characteristics (cont.)

	Average Monthly	Maximum Daily
Temperature	60°F	70°F

[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)	6.5	8.3
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Latitude/ Longitude:
72-04-10/42-06-32

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

1. 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

2. 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