

9/30/08
received

US EPA, Region I
NCCW GP Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

25 September 2008

To Whom It May Concern:

Tyco Valves & Controls (TVC)– Wrentham, dba Anderson Greenwood Crosby, located at 43 Kendrick St., Wrentham, MA, was authorized to discharge under the US EPA's National Pollutant Discharge Elimination System (NPDES) non-contact cooling water (NCCW) general permit issued 25 April 2000 and expired 25 April 2005. TVC-Wrentham submitted a Notice of Intent for renewal of the General Permit on 14 January 2005 and submitted payment of \$385 (transmittal #W058975) to MA DEP on 19 January 2005.

Attached is the NOI application for the Massachusetts NPDES, NCCW general permit No. MAG250000 renewal issued 18 July 2008, for TVC-Wrentham (original permit number MAG250431).

Due to the design of TVC-Wrentham's outfalls (use of municipal Wrentham well water for NCCW to outfalls entering a "settling pond"), the engineering calculations for temperature rise and dilution factor demonstrated in Attachments A and B of the NCCW General Permit have been altered to use the "settling pond" as the dilution factor for the NCCW.

If you need to communicate with this facility, MAKE CERTAIN THAT YOU CONTACT THE 43 KENDRICK ST., WRENTHAM, MASSACHUSETTS SITE. If you attempt to contact the parent company, any response will be significantly delayed.

If you have any questions, please contact me at 508-384-4521 or H.Hincman at 508-384-4740.

Sincerely,

Clement M. Foye
Clement M. Foye
Plant Engineering & Environmental Manager
TYCO VALVES & CONTROLS
ANDERSON GREENWOOD CROSBY

Cc: Kathleen Keohane
Mass DEP, Div. of Watershed Management
627 Main Street, Worcester, MA 01608

G:/Water/NCCWNewtr08

43 Kendrick Street
Wrentham, Massachusetts 02093
TEL: (508) 384-3121 • FAX: (508) 384-8675

A **tyco** INTERNATIONAL LTD. COMPANY

APPENDIX 5

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

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

a) Name of facility: <u>Tyco Valves + Controls - Wrentham</u> <u>Anderson Greenwood Crosby</u>		Type of Business: <u>Valve manufacturer</u>
Facility Location Address: <u>43 Kendrick St.</u> <u>Wrentham, MA 02093</u> longitude: <u>42° 03' 24"</u> latitude: <u>071° 21' 00"</u>	Facility SIC codes: <u>3491</u>	Facility Mailing Address (if not location address)
b) Name of facility owner: <u>Tyco International Ltd.</u>		Email address of owner: <u>—</u>
Owner's Tel #: <u>609-720-4200</u> Owner's Fax #: <u>—</u>		Owner is (check one): 1. Federal <u>—</u> 2. State <u>—</u> 3. Tribal <u>—</u> 4. Private <u>✓</u> 4. Other <u>—</u> (Describe)
Address of owner (if different from facility address) <u>7 Roszel Rd.</u> <u>Princeton, NJ 08540</u>		
Legal name of Operator, if not owner: <u>Tyco Valves + Controls (TVC)</u> dba <u>Anderson Greenwood</u>		
Operator Contact Name: <u>Clement M. Foye</u>		
Operator Tel Number: <u>508-384-4521</u> Fax Number: <u>508-384-3149</u>		
Operator's email: <u>cfoye@tycovalves.com</u>		
Operator Address (if different from owner) <u>43 Kendrick St.</u> <u>Wrentham, MA 02093</u>		
d) Attach topographic map indicating the locations of the facility and the receiving water; all NCCW discharge points; upstream downstream monitoring points. Map attached? <u>✓</u>		
e) Check Yes or No for the following:		
1. Has a prior NPDES permit been granted for the discharge? Yes <u>✓</u> No <u>—</u> If Yes, Permit Number: <u>MAG 25043</u>		
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes <u>—</u> No <u>✓</u>		
3. Is the facility covered by an individual NPDES permit? Yes <u>—</u> No <u>✓</u> If Yes, Permit Number <u>—</u>		
4. Is there a pending application on file with EPA for this discharge? Yes <u>—</u> No <u>✓</u> If Yes, date of submittal: <u>—</u>		

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

a) Indicate source of the NCCW (i.e., municipal water supply, private well, surface water withdrawal, groundwater):

Source: municipal water supply -

Name of Source Water: Town of Wrentham - well water

Is the source registered/permitted under MA Water Management Act or NHDES Water User Registration Rule (Env Wq 2202)?

Yes ☒ No ☐

If yes, registration number: 42535001

b) If source water is surface water:

i) Is it a freshwater river or stream Yes ☐ No ☐

ii) Is it a lake? ☐ reservoir? ☐

iii) Is it tidal river? ☐ estuary? ☐ ocean? ☐

c) Is the source water groundwater? Yes ☐ No ☐ If yes, see Appendix 8 and submit effluent and surface water test results, as required in Part 5.4 of the General Permit.

d) Does the facility use both a primary and backup source of noncontact cooling water? Yes ☐ No ☐

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.

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: The facility has discharges by this General Permit but does not withdraw water from surface waters for use, in full or part, as NCCW.

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

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

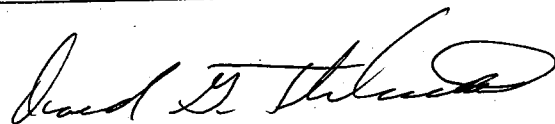
9. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

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:

Operator signature:



Title:

General Manager

Date:

25 Sept 2008

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.

FRANKLIN, MASSACHUSETTS-RHODE ISLAND

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

7.5 X 15 MINUTE SERIES (TOPOGRAPHIC)

Franklin
MASSACHUSETTS-
RHODE ISLAND
1:25,000-scale metric
topographic map



7.5 X 15 MINUTE QUADRANGLE
SHOWING

- Contour and elevation
in meters
- Highway, road, and other
transportation structures
- Water features
- Wooded areas
- Geographic names



Produced by the United States Geological Survey
in cooperation with Massachusetts Department
of Public Works

Control by U.S.G.S. MONITORING, Commission of
Massachusetts, and State of Rhode Island agencies.
Controlled by photogrammetric methods from aerial photographs
taken 1975. First edition 1980. This edition 1987.
The map scale is 1:25,000 and is based on the datum of
the National Aeronautics and Space Administration (NAD 83).
Horizontal and vertical accuracy are as follows:
Horizontal Accuracy: Horizontal distance between points
shown on the map and their actual positions on the ground
is not more than 1 meter in 1000 meters.
Vertical Accuracy: Vertical distance between points shown
on the map and their actual elevations above mean sea level
is not more than 1 meter in 1000 meters.
There may be some discrepancies between the horizontal
and vertical positions shown on the map and the actual
positions of the points on the ground.
CONTINUOUS INTERVAL: 5 METERS
VERTICAL DATUM: MEAN SEA LEVEL
CONTINUOUS INTERVAL: 5 METERS
VERTICAL DATUM: MEAN SEA LEVEL
THE MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS

Symbol	Description	Symbol	Description	Symbol	Description
[Symbol]	Contour interval 5 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 10 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 20 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 50 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 100 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 200 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 500 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 1000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 2000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 5000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 10000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation

7.5 X 15 MINUTE QUADRANGLE
SHOWING

Topographic Map Symbols

Symbol	Description	Symbol	Description	Symbol	Description
[Symbol]	Contour interval 5 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 10 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 20 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 50 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 100 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 200 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 500 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 1000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 2000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 5000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation
[Symbol]	Contour interval 10000 meters	[Symbol]	Spot elevation	[Symbol]	Spot elevation

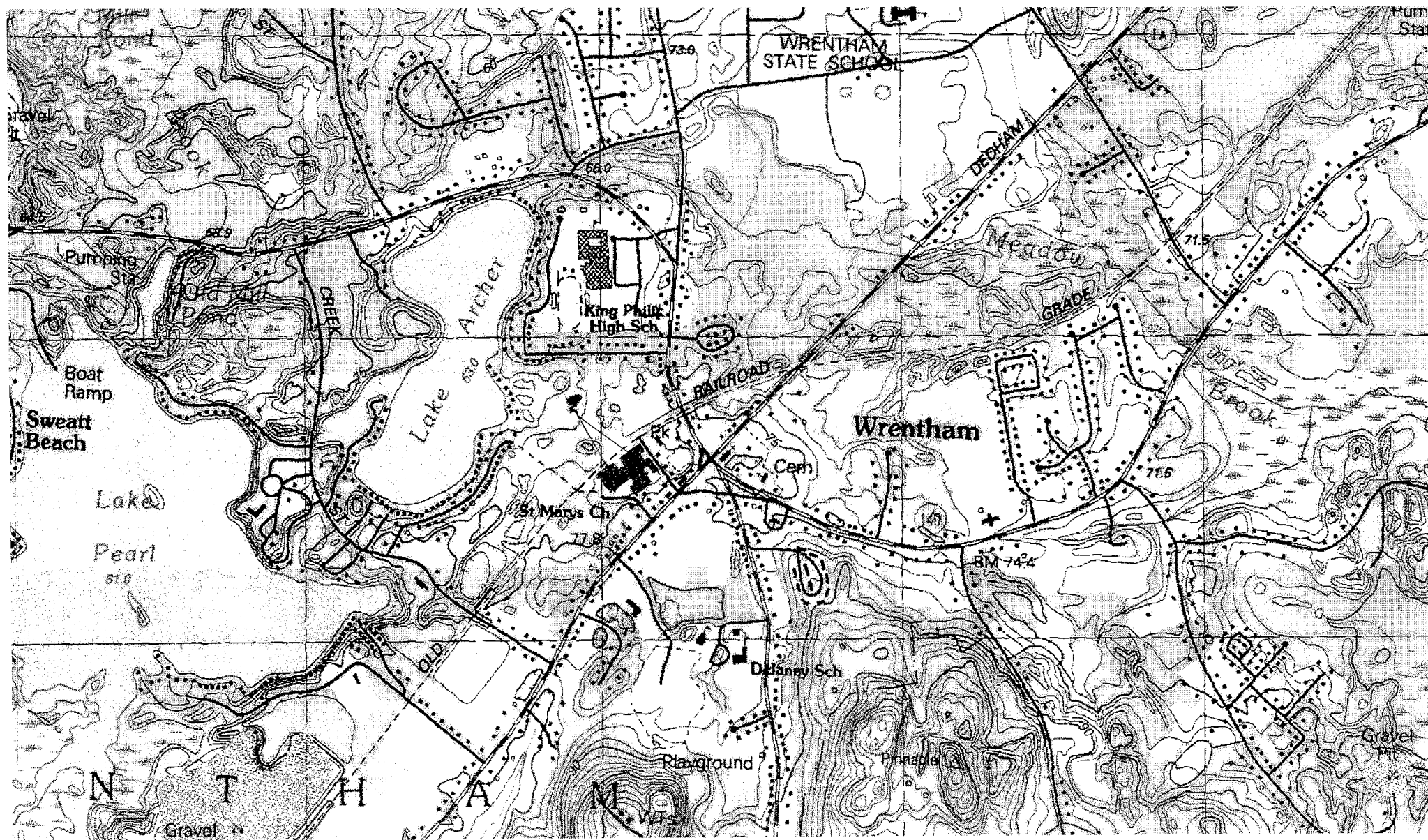
A complete topographic map is available in paper
format. Contact your local map dealer for more information.

App 5, l.d.

■ = TUC-Warrenton facility
* = Outfalls

FRANKLIN, MASSACHUSETTS-RHODE ISLAND
1:25,000-scale metric
topographic map

1987



39.14 X 24.92 1h

-  = TVC-Wrentham facility
- * = outfalls
- = settling pond, "unnamed tributary to Lake Archer"

Attachment A: Determination of effect on receiving water temperature
BTU determination from water exiting the facility

Flow from plant:	2000 gal	previous allowable max, 1MGPD
Δ Temperature:	17 °F	65 to 83 °F

Amount of heat generated in BTU

$$Q = m * c (t_2 - t_1)$$

Q = rate of heat added, BTU/hr

m = weight flow of substance, lb/hr

c = specific heat of substance, BTU/lb-°F

$$\text{GPD}/10 \text{ hr}/\text{da} * 60 \text{ min}/\text{hr} = 2000 \text{ GPD}/600 \text{ min} = 3.33 \text{ GPM} * 500 \text{ lb}/\text{hr}/1 \text{ GPM water} = 1666.7 \text{ lb}/\text{hr}$$

$$Q_{\text{plant}} = 1666.7 \text{ lb}/\text{hr} * 1 \text{ BTU}/\text{lb-}^\circ\text{F} * 17^\circ\text{F} = \mathbf{28,333 \text{ BTU}/\text{hr}}$$

$Q_{\text{plant}} = Q_{\text{river}}$ = heat load discharged from the plant, absorbed by the river

In this situation, the "river" ≡ "settling pond" or "lake"; therefore, $Q_{\text{plant}} = Q_{\text{river}} = Q_{\text{lake}}$

Q_{lake} = quantity of the receiving "lake" :

$$d = 125 \text{ ft}; r = 125/2 = 62.5$$

$$A_{\text{circle}} = \pi r^2$$

$$A = 3.14 * (62.5)^2 = 12,266 \text{ ft}^2$$

$$A_{\text{cylinder}} = \pi r^2 h$$

$$A_{\text{lake}} = 12,266 \text{ ft}^2 * 3 \text{ ft deep} = 36,797 \text{ ft}^3 * 7.48 \text{ gal}/\text{ft}^3 = \mathbf{275,241 \text{ gal}}$$

$$\Delta T_{\text{river}} = \Delta T_{\text{lake}} = Q_{\text{lake}} / C_p * M_{\text{lake}} * .9$$

$\Delta T_{\text{river}}, \Delta T_{\text{lake}}$ = change in lake temperature

Q_{lake} = heat load absorbed by lake

C_p = heat capacity of water, °F * BTU/lb

M_{lake} = mass of lake, gal

.9 = factor to reserve 10% river's assimilative capacity

$$\Delta T_{\text{lake}} = 28333 \text{ BTU}/\text{hr} / 1.0 \text{ }^\circ\text{F} * \text{BTU}/\text{lb}/10 \text{ hr}/\text{da} * \text{gal}/8.34 \text{ lb} * 275241 \text{ gal} * .9$$

$$(28333 \text{ BTU}/\text{hr} * 1.0 \text{ }^\circ\text{F} * \text{lb}/\text{BTU} * 10 \text{ h}/\text{da} * \text{gal}/8.34 \text{ lb}) / 275241 * .9 = \mathbf{.11 \text{ }^\circ\text{F}}$$

From NPDES , NCCW General Permit, Part 1.1:

water body temperature, Class B waters, °F = change of less than 3.0°F from background in cold water and less than 5°F in warm water fisheries.

Attachment B

Likewise for chlorine from Part 1.5, Freshwater acute (Class A or B) = 19 ug/l ; use for daily max

Chlorine average quantity for last year (analysis performed quarterly) = 68 ug/l

Dilution factor of the lake:

$$M_{\text{lake}} = \text{mass of lake, gal} \quad \frac{275241 \text{ gal} * .9}{68 \text{ ug}/\text{l} * 1/50} = \mathbf{51.6}$$

$$M_{\text{plant}} = \text{mass of plant's max design flow, gal} \quad (@2000 \text{ gal}/10\text{hr}, 4800 \text{ gal}/24 \text{ hr})$$

$$68 \text{ ug}/\text{l} * 1/50 = 1.36 \text{ ug}/\text{l}, \text{ well under } 19 \text{ ug}/\text{l} \text{ daily max.}$$



Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlifeWayne F. MacCallum, *Director*

9/8/2008

Clement Foye
Tyco Valves & Controls - Wrentham
43 Kendrick Street
Wrentham MA 02093

RE: Project Location: 43 Kendrick Street
Town: WRENTHAM
NHESP Tracking No.: 08-25355

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program ("NHESP") of the MA Division of Fisheries & Wildlife for information regarding state-listed rare species in the vicinity of the above referenced site.

Based on the information provided, the NHESP has determined that at this time the site is not mapped as Priority or Estimated Habitat and the NHESP database does not contain any state-listed species records in the immediate vicinity of this site.

This evaluation is based on the most recent information available in the NHESP database, which is constantly being expanded and updated through ongoing research and inventory. If you have any questions regarding this letter please contact Amy Coman, Endangered Species Review Assistant, at (508) 389-6364.

Sincerely,

Thomas W. French, Ph.D.
Assistant Director

www.masswildlife.org