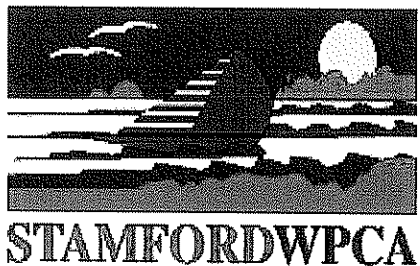


William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

BUREAU OF WATER PROTECTION AND LAND REUSE  
PLANNING & STANDARDS DIVISION

APR 08 2014

April 4, 2014

Mr. Carlos Esguerra, Sanitary Engineer  
CT Department of Energy & Environmental Protection  
Bureau of Water Protection and Land Reuse  
Planning & Standards Division  
79 Elm Street, 2<sup>nd</sup> floor  
Hartford, CT 06106

**Re: Notice of Violation # 14-002**

Dear Mr. Esguerra,

This is in response to the Notice of Violation No. 14-002 regarding permit exceedances that occurred in December 2013, January and February 2014 due to operation of the ultraviolet light (UV) system. The events contributing to these exceedances were described in previous correspondence to CT DEEP included in Appendix A to this letter.

A. Exceedances and Corrective Actions

In summary, these exceedances were related to the following:

1. Malfunction of the water level control in the UV channel due to erroneous readings of the water level by the water level sensors (exceedances on January 13, 23 and 27, 2014).
2. Malfunction of the power circuit breaker for UV Channel 2 (exceedance on February 16, 2014).
3. Malfunction of the motor operator for the final effluent gate causing the loss of power to UV Channel 1 (exceedance on January 28, 2014)
4. Turbid final effluent due to chlorination of return activated sludge (exceedance on January 2, 2014).
5. Loose electrical connection for a UV lamp module in UV Channel 2 and disabled audible alarm during system maintenance (exceedance on December 19, 2013)

Stamford WPCA, 111 Harbor View Ave., Stamford, CT 06902

Corrective actions to address the above include:

1. Water level sensors, wiring and connection to the UV system programmable logic controller (PLC) were replaced, and the UV system programming was modified to improve the water level control and avoid a system malfunction due to an erroneous water level reading.
2. The power circuit breaker for UV Channel 2 was replaced on February 20, 2014.
3. The motor operator for the final effluent gate was replaced on or about March 6, 2014.
4. Chlorination of return activated sludge (RAS) will be closely monitored to avoid over dosing chlorine and adversely affecting effluent water quality.
5. The electrical connection for the UV lamp module in UV Channel 2 was immediately restored. The UV system manufacturer (Xylem) will modify the UV system alarm programming to initiate an audible alarm even after the audible alarm has been disabled for a previous alarm condition (e.g. due to an alarm condition from work in the other UV channel). Programming will be done as part of other UV system improvements by Xylem described in Section B, below. Also, priority alarms from the UV system will be sent to the operator's cell phone using the plant's auto dialer.

#### B. UV System Improvements

SWPCA has issued a purchase order to Xylem to provide recommended improvements to the UV system as described in their proposal dated February 7, 2014 (included in Appendix B). These improvements include:

- a) Replace UV intensity sensors with latest version.
- b) Modify UV system programming to measure flow in each UV channel and pace UV dosage in each channel based on the measured flow. SWPCA will install the water level sensors.
- c) Modify UV system programming to automatically close the effluent gate of a UV channel if the channel is unable to maintain the minimum UV dose of 30 mW,s/cm<sup>2</sup>.
- c) Install upgraded UV percent transmittance monitor (HIPPO).
- d) Modify UV system alarm programming to provide separate audible alarms for each high priority alarm (described in paragraph 5, above).

The above improvements are expected to be completed by May 15, 2014.

In addition, SWPCA has retained Knapp Engineering to troubleshoot the plant's existing auto dialer, and Minot Enterprises (SCADA system programmer) to reprogram the auto dialer to automatically call the WPCF foreman on their cell phone to notify them of a UV system high priority alarm (e.g. low UV dose or unplanned system shut down, etc.). If the dialer can be reprogrammed, this work will be completed by April 30, 2014, otherwise, the auto dialer will need to be replaced, and the work will be dependent on delivery of a new unit.

### C. Stantec Report and Recommendations

Stantec was retained by the SWPCA in year 2012 to evaluate three issues related to the UV system; 1) the UV system control panels over heat and trip out during hot weather, 2) control of algae growth in the final clarifiers which can slough off and cause a high bacteria count and a permit exceedance, 3) new NPDES Permit bacteria limits may not be met by existing UV system. Stantec's evaluation and recommendations are described in their final reports dated September 2012 and April 2013. The status of the corrective actions to address these issues is described below.

#### 1. UV system over heating during hot weather.

Stantec recommended that the existing air conditioning (A/C) for the UV system electrical building be supplemented with a smaller "jockey" A/C system. SWPCA has solicited proposals from mechanical contractors to install the jockey system, which will be completed by May 15, 2014, prior to hot weather. ✓

#### 2. Install algae removal system for the final clarifiers

Stantec evaluated alternative algae removal systems and recommended the installation of covers over the final clarifiers' effluent weirs and launders. SWPCA considered this approach, but was concerned that the covers would be difficult to access to allow inspection of the clarifiers' weirs and launders given that the final clarifier effluent channels are well below ground level.

SWPCA preferred an automatic brush cleaning system to control the algae growth, and SWPCA issued a purchase order for installation of a brush cleaning system by Envirodyne (described in Appendix C) on January 13, 2014, which is expected to be completed by May 31, 2014.

#### 3. Ability of UV system to meet new permit limits

Stantec contacted the UV system manufacturer, WEDECO (now Xylem) in 2012 to confirm that the existing UV system could meet the new NPDES Permit limits


for enterococci bacteria. Xylem would not confirm that the existing system could meet the limits at the plant's design flows and the design UV dose.

Since that time, SWPCA requested Xylem to perform a laboratory collimated beam test to determine the dose required to sufficiently disinfect plant effluent to meet the new permit limits. The results were favorable compared to the design dose of the existing system. In addition, for the past year SWPCA has performed routine testing of enterococci in accordance with the testing requirements of the new permit and found that the UV system met the new limits except for one occasion (on January 2, 2014, described previously) which has been addressed. Xylem has further confirmed that the newly installed UV lamps provide greater light intensity at the end of the lamp life compared to original equipment, which effectively increases the design dose of the system. Given this, we are reasonably confident that the existing UV system is capable of meeting the new permit limits.

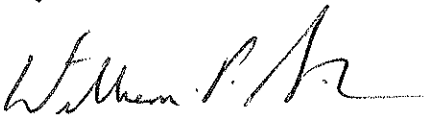
In accordance with the directions in the above-referenced Notice of Violation, I certify that the noted violations (and additional comments) have been or will be corrected as described above.

**Certification of Accuracy**

I certify that the information in his Compliance Statement and any attachments are true, accurate and complete, and I understand that any false statement may be punishable as a criminal offense under Connecticut General Statutes sections 22a-6 and 53a-17.



Michael E Handler, Chairman  
SWPCA Board of Directors



William P. Brink, P.E., BCEE (preparer)  
Executive Director

Attachments

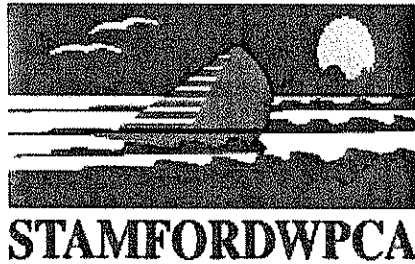
cc: Neil Handler, USEPA  
Ernie Orgera, Director of Operations  
William Degnan, Plant Supervisor  
Marie Sabo, Laboratory Director



STAMFORDWPCA

## Appendix A

William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

December 23, 2013

Iliana Raffa  
Municipal Facilities Section  
CTDEEP  
79 Elm Street  
Hartford, Ct. 06106-5127

Dear Iliana,

This is a follow up report on the exceedance caused by a UV system electrical malfunction on Dec. 19, 2013. The information below is based on SCADA information and what we know as of now.

First, on the morning of December 19, 2013 a team of operators and a supervisor went out to work on UV lamp change out in channel one. Once the operators pulled the electrical plug on a module it triggers a high priority alarm. This in turns triggers a flashing light and audible alarm. It is standard practice to turn the audible alarm off so you can work without the horn going. The strobe light continues going.

Both channels 1 and 2 are wired into one common alarm system. At the same time that the lamp change out was going on our plant electrician was doing routine electrical voltage checks in the wiring trough for channel 2. This is when the incident happened, we suspect. Something caused the channel 2 UV lamps to trip out on "plug disconnect." There were no plugs disconnected at any time in channel 2. The electrician and operators working on the system were not aware the lamps in channel 2 had tripped out, since the system was already in alarm mode from the lamp change out in channel 1, and the second alarm wasn't noticed because of the common alarm wiring system. Another operator monitoring the SCADA system from a different location noticed the multiple alarms and notified the supervisor doing the lamp change out who responded immediately.

Based on SCADA information we went below the minimum  $30 \text{ mJ/cm}^2$  dosing level from 9:27 AM to 9:53 AM, approximately 26 minutes. The process treated flow that passed through the UV channel, not disinfected, was approximately 150,000 gallons. All the necessary paper worked was filed and notifications made.

In an effort to prevent this type of incident from occurring again we have contacted our SCADA programmer to see if we can get notification based on UV dosing. If the dosing

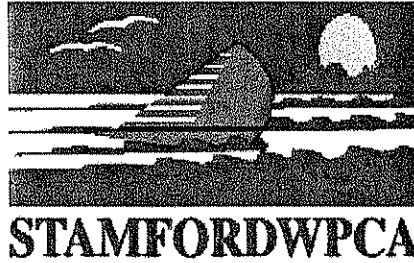
goes below our minimum set point of 37 mJ/cm<sup>2</sup> on either channel an alarm would be sent directly to the Supervisor's cell phone coupled with a pop up alarm on the SCADA screen. If this can be accomplished we will have it done.

Respectfully Submitted,

Bill Degnan  
Plant Supervisor / Chief Operator  
Stamford WPCA

CC: William P. Brink, P.E., BCEE, Executive Director  
Marie Sabo , Lab Director

William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

Jan 08, 2014

Iliana Raffa  
Municipal Facilities Section  
CTDEEP  
79 Elm Street  
Hartford, Ct. 06106-5127

Re: Permit Exceedance on January 2, 2014

Dear Iliana,

This is a follow up report on the events that led to an exceedance of the permit limit for enterococcus on January 2, 2014.

On December 31, 2013 a decision was made to chlorinate the return activated sludge (RAS) due to high levels of Type 1863 and attached growth filaments which resulted in measurements of SVI's exceeding 200. We chlorinated RAS for 48 hours and then stopped. At the same time we were working on the actuator for one of the UV channel level control gates and the two UV channels were placed in maintenance mode. All four UV banks were at 100% output power and have been for the last several days.

Our lab reports show that for January 2, 2014 our fecal coliform and enterococci counts were each greater than 2,419.6 CFU/100mm (IDEXX/mpn). These readings occurred while all four UV banks were on at 100% output power. The transmittance was at 62% and dosing readings were at 88, 71, 63, and 73 mJ/cm<sup>2</sup>.

Further lab results showed the filaments had died and were breaking up causing murky effluent and higher than normal turbidity and suspended solids. We believe that the lower transmittance contributed to the high bacteria counts which caused the exceedance even though we were well above our mandatory minimum UV dosing rate of 30mJ/cm<sup>2</sup>.

This incident has been forward to the UV system manufacturer for their input as to how the high bacteria counts occurred at nearly twice the minimum mandatory dosing required. The effluent has since cleared up and the plant is back to normal performance.

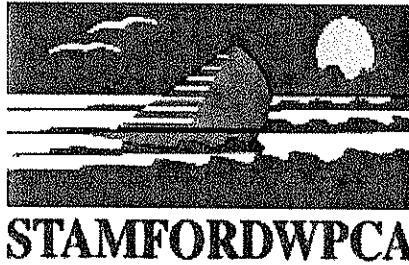


Sincerely,

William Degan  
Plant Supervisor

CC: William P. Brink, P.E., BCEE, Executive Director  
Marie Sabo , Lab Director

William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

Jan 21, 2014

Iliana Raffa  
Municipal Facilities Section  
CTDEEP  
79 Elm Street  
Hartford, Ct. 06106-5127

Re: Malfunction of UV System January 13, 2014

Dear Iliana,

This is a follow up report on the events that led to the malfunction of the UV system.

On Jan. 13 around 2:15 PM two (2) operators went out to the UV system to pull the algae screens and clean them. At the time of the cleaning channel two (2) was in manual gate operation and 100% maintenance dosing mode. Channel one (1) was in auto mode with gate operation and UV dosing.

As is normal when the algae screen is lifted from the channel the flow in the second channel drops rapidly causing a low water level alarm and shutting the UV lamps down for a three (3) minute period to protect them. This first time event occurred, but after recovering, it kept repeating itself for four (4) more times. This in turn led to channel two shutting down for three minutes due to a low water level alarm. The shift foreman immediately placed the entire system in manual operation, gate elevation and 100% maintenance mode. The system then went back to normal operation. We will stay in this mode for now while working with the manufacturer to find the cause of the problem. After the Jan. 03 incident we determined that one of the ultrasonic probe's, which maintains the water level in one of the channels, was defective. We ordered two new ultrasonic units and installed them on Jan. 15. On Jan 16 we reset and double checked all the gate settings and are scheduled to have a phone meeting with the manufacturer this afternoon. We are expected to return to auto mode after that phone meeting.

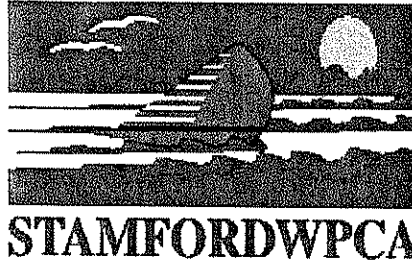
The WPCA staff and the manufacturer who arrived on Friday Jan 17, worked together all day long. The UV system was put through a series of test and they all proved to be successful. During the long weekend of Jan. 18, 19, and 20<sup>th</sup> the UV system proved to be successful with no problems recorded. The SCADA system shows a steady straight line with no interruptions for the three days. We believe we have solved the problem. We are in the process of getting further upgrades to the system which will improve the system's reliability.

Sincerely,

William Degnan  
Plant Supervisor

CC: William P. Brink, P.E., BCEE, Executive Director  
Marie Sabo , Lab Director

William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

February 3, 2014

Iliana Raffa  
Municipal Facilities Section  
CTDEEP  
79 Elm Street  
Hartford, Ct. 06106-5127

Dear Iliana,

This is a follow up report on the exceedances caused by a loss of UV disinfection on January 23<sup>rd</sup>, 27<sup>th</sup> and 28<sup>th</sup>. The information below is based on SCADA information and what we know as of now.

- On the morning of January 23<sup>rd</sup> at approximately 7:00 AM our SCADA system received an alarm indicating a high water level in the UV channel. The SCADA system recorded an erroneous water level signal of 58.70 inches. The actual water level was close to the normal set point is 45.25 inches. The high water level signal in turn caused the UV channel weir gate to drop to lower the water level. When the water level drops the low water level alarm is triggered which then shuts the UV system down to protect the UV lamps from being exposed above the water. The UV system then goes through a 3 minute reset period during which UV disinfection is not provided. The operators responded to the alarm as quickly as possible and placed the UV system in manual operation, but not before the system recorded 4 high water level readings resulting in 4 system shut downs at 3 minutes each for a total of 12 minutes. During this period we discharged approximately 90,000 gallons of non-disinfected water into the East Branch of the Stamford Harbor. Once in manual mode the system the water level readings stabilized and the system returned to normal operation.
- On the morning of January 27<sup>th</sup> at approximately 10:55 AM we had a similar incident where our SCADA system received an erroneous higher water level reading followed by a low water level alarm. The staff quickly responded to the alarm and placed the UV system in manual operation. In this incident we had 3 erroneous water level readings resulting in 3 system shut downs at 3 minutes each for a total of 9 minutes during which we discharged approximately 12,000 gallons of non-disinfected water into the East Branch of the Stamford Harbor.

- On the morning of January 28<sup>th</sup> at approximately 7:40 AM, UV channel 1 lost power and shut down. The staff responded and found that there was no electrical power to UV channel 1. The influent gate to channel one was closed to minimize the discharge of non-disinfected water. It was discovered that the motor on the plant's final effluent gate had failed, causing the electrical circuit breaker for that area of the plant, including UV channel 1, to open, shutting the system down. Our plant electrician confirmed the motor failure and a new motor was ordered to replace the failed one. We estimate that the discharge of non-disinfected effluent to the East Branch of the Stamford Harbor lasted about 9 minutes and amounted to approximately 80,000 gallons. This was an isolated incident that was not related to the previous UV system malfunctions caused by erroneous water level readings.

Previously, on January 17<sup>th</sup> a technician from Wedeco/Xylem was at the plant all day testing our UV system and could find nothing wrong with the system. We put the system through a series of tests including pulling upstream channel screens to change the water level, switching from manual to auto and back to manual operation. The technician also had system tests from the main office to perform. We had replaced the water level sensors and at Xylem's recommendation pulled new shielded cable from the sensor to the control panel. On January 30<sup>th</sup> and 31<sup>st</sup> the Xylem service technician was again at the plant to test the system but could not locate the source of the erroneous water level readings. At Xylem's recommendation the setting for the water level sensors was changed and a delay was programmed into the water level reading to avoid the system reacting to erroneous water level readings in the future.

We will continue to update you as we work on the UV system to improve its performance.

Respectfully Submitted,

Bill Degnan  
Plant Supervisor / Chief Operator  
Stamford WPCA

CC: William P. Brink, P.E., BCEE, Executive Director  
Marie Sabo, Lab Director

William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



**STAMFORDWPCA**

Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

Feb. 17, 2014

Iliana Raffa  
Municipal Facilities Section  
CTDEEP  
79 Elm Street  
Hartford, Ct. 06106-5127

Dear Iliana,

This is a follow up report on the exceedance caused by a UV system malfunction on Feb. 16, 2014. The information below is based on SCADA information and what we know as of now.

On Sunday Feb. 16, 2014 at approximately 5:30 PM the plant had a 45 minute exceedance as a result of the loss of power to one of the UV channels. The circuit breaker for the power supply to one of the two UV channels tripped from a power surge that immediately preceded a utility power failure that struck the plant. The power surge tripped other breakers for other equipment around the plant also, including the raw sewage pumps. The operators had to manually reset the circuit breakers and restart the equipment. Normally the equipment will automatically restart when utility power is restored or the emergency power turns on. Such was the case with the UV system. One UV channel came back on automatically, as it should, but the other UV channel did not due to the tripped breaker causing the permit exceedance. In all other aspects the UV system has been running well.

The defective breaker has since been replaced and we are progressing with the UV upgrade of newer equipment and other safety features that will help prevent future problems.

As always please call should you have any questions.

Respectfully Submitted,

A handwritten signature in black ink that reads "Bill Degnan". The signature is written in a cursive, flowing style.

Bill Degnan  
Plant Supervisor / Chief Operator  
Stamford WPCA

CC: William P. Brink, P.E., BCEE, Executive Director  
Marie Sabo, Lab Director



**STAMFORDWPCA**

## Appendix B



*Xylem Water Solutions USA, Inc.*  
*Wedeco Products*

14125 South Bridge Circle  
Charlotte, NC 28273  
Tel 704/409-9700  
Fax 704/295-9080

February 7, 2014

CITY OF STAMFORD WTP  
111 HARBOR VIEW AVE  
STAMFORD CT 06902

Quote # 2014-WED-0002

Re: STAMFORD - 109541 - SENSOR UPGRADE

Xylem Water Solutions USA, Inc. - WEDECO is pleased to provide a quote for the following equipment and/or services for your approval.

THE PROVIDED QUOTE IS AN ESTIMATE OF ACTUAL COST FOR THE SENSOR UPGRADE, CUSTOMER WILL BE BILLED TO COST.

**UV SPARES**

Qty	Description	Unit Price	Extended Price
4	14-65 33 09 KOME IV, LOW UVT, SETUP PER EN KOME IV (WW)	\$ 755.00	\$ 3,020.00
4	14-65 28 36 SIGNAL ISOLATOR, 0-20MA IN 0-2	\$ 393.00	\$ 1,572.00
4	14-65 28 44 MOUNTING RAIL, END PLATE	\$ 7.60	\$ 30.40
4	14-65 28 47 PLASTIC RAIL, FIXING FOOT, B	\$ 3.30	\$ 13.20
1	14-65 87 07 RAIL, RS100, 2000M EXTRUDED 2M LENGTH EXTRUDED PROFILE	\$ 73.00	\$ 73.00
4	14-65 19 28 FRAME 6 POSITION MODULAR	\$ 47.00	\$ 188.00
4	MODULE COMPLETE MODULE ASSEMBLY - 130C/L 9 LAMPS DEEP COMPLETE WITH LAMPS AND SENSOR	\$ 9,428.00	\$ 37,712.00
1	76-03 60 18 UV SENSOR SO13799 - WW	\$ 940.00	\$ 940.00

**WEDECO**  
a xylem brand



Qty	Description	Unit Price	Extended Price
	Benefits:		
	<ul style="list-style-type: none"> <li>• More accurate and repeatable data. Better sensor technology.</li> <li>• Less maintenance. Once the intensity factor is set, it doesn't have to be adjusted again with the change of each new bank of lamps.</li> <li>• With the spare reference sensor, the intensity reading can be spot checked onsite or easily replaced without significant downtime when the time comes to send the duty sensors in for verification.</li> </ul>		

### UPGRADE HIPPO

Qty	Description	Unit Price	Extended Price
1	14-65 87 11 REAL UV254 M1500 M1500	\$ 6,043.00	\$ 6,043.00
1	14-65 87 13 REAL CONROLLER FOR PROBE UVT-129010	\$ 1,738.00	\$ 1,738.00
1	14-65 87 12 REAL AIR CLEAN SYSTEM UVT-128060	\$ 2,045.00	\$ 2,045.00
1	14-65 87 10 REAL M1000 PROBE MOUNTING KIT UVT-138040	\$ 405.00	\$ 405.00
	Benefits:		
	<ul style="list-style-type: none"> <li>• The unit is more maintenance friendly than the present HIPPO. Accurate transmittance data will be helpful in diagnosing any questionable trends of the UV intensity values.</li> </ul>		

The City of Stamford shall be responsible for required conduit and wiring. Xylem will supply installation specifics and wire specifics.

### SYSTEM ALARMING ENHANCEMENT

Qty	Description	Unit Price	Extended Price
	Allow for audible alerts on new alarms once existing alarms are acknowledged (silenced).		
3	14-69 99 80B LABOR, SOFTWARE-WEDECO PROGRAMMING TIME	\$ 180.00	\$ 540.00

Qty	Description	Unit Price	Extended Price
	Benefits: <ul style="list-style-type: none"> <li>• Ensures alerts for new alarms if a channel is offline or under maintenance.</li> </ul>		
	This works consists of a programming change with the accompanying on-site verification and testing.		

**PROVIDING INDIVIDUAL CHANNEL FLOW MEASUREMENT**

Qty	Description	Unit Price	Extended Price
2	14-69 99 80B LABOR,SOFTWARE-WEDECO PROGRAMMING TIME	\$ 180.00	\$ 360.00
1	1408153000682G HYDRORANGER GATE BRACKET Benefits: <ul style="list-style-type: none"> <li>• Allows for direct and immediate flow control of each channel.</li> </ul>	\$ 1,841.00	\$ 1,841.00

The City of Stamford shall be responsible for the procurement of the Milltronics Hydorranger 200 controller, programmer, and the Echumax XPS-10 (qty 2). Mounting hardware, mounting hardware installation and required conduit and wiring. Xylem will supply level hardware recommendations, installation specifics and wire specifications.

**SERVICE VISIT**

Qty	Description	Unit Price	Extended Price
44	14-69 99 80A LABOR,MOBILE-WEDECO FIELD SERVICE ON SITE LABOR TO IMPLEMENT CHANGES, VALIDATE AND TEST.	\$ 180.00	\$ 7,920.00
26	14-69 99 80D LABOR TRAVEL WEDECO FIELD SERVICE	\$ 80.00	\$ 2,080.00
1	14-69 97 27 EXPENSES(TRAVEL,MEALS AND/OR+ LODGING) TAXABLE ESTIMATED - TO BE BILLED AT COST	\$ 2,200.00	\$ 2,200.00

**Total Project Price** **\$ 68,720.60**

**Incoterm:** 1 FCA - Free Carrier      **Named Placed:** 02 - US WH/ Factory  
Incoterms 2010 clarify responsibility for costs, risks, & tasks associated with the shipment of goods to the named place.

**Terms of delivery:** Freight PP/Add Actual

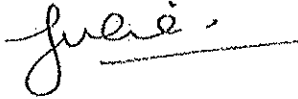
**Terms of payment:** Net 30 Standard

**Warranty:** Standard warranty terms apply to the items in this quotation.

**Validity:** This Quote is valid for thirty (30) days.

**Time of delivery:** Approx. 10 working weeks after receipt of order.

Sincerely,

A handwritten signature in cursive script, appearing to read "Julie Ropic", is written over a horizontal line.

JULIE ROPIC

Phone: 704-409-9793

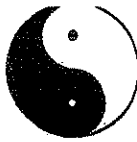
[julie.ropic@xyleminc.com](mailto:julie.ropic@xyleminc.com)



**STAMFORDWPCA**

## Appendix C

Founded  
1971



## ENVIRODYNE SYSTEMS INC.

75 Zimmerman Drive Camp Hill, PA 17011-6822

Fax  
717 - 763-9308

Telephone  
717 - 763-0500

### P R O P O S A L

December 4, 2013

Bill Degnan  
STAMFORD WATER POLLUTION CONTROL AUTHORITY  
111 Harbor View Avenue  
Stamford, CT 06902

Re: Stamford, CT  
WPCF  
Algae Brush Cleaning Systems

Envirodyne Systems Inc., called the Seller, proposes to furnish to Stamford Water Pollution Control Authority, called the Buyer, on the terms and conditions stated the equipment herein specified for installation in the WPCF, Stamford, CT.

Detailed Specifications set forth below or which may be attached hereto are a part of this Proposal.

#### EQUIPMENT

Ref.: ALGAE BRUSH CLEANING (ABC) SYSTEMS

Three (3) ALGAE BRUSH CLEANING (ABC) SYSTEMS, each to be a mechanical brush cleaning system designed and constructed to clean algae and debris from the effluent surfaces and to replace existing units on secondary clarifiers. Price for each includes and is limited to:

Mounting Attachment, if required, & Main Frame, S.S.  
Brush Arms, S.S.  
Spring Assemblies, S.S.  
Brush Holder, S.S.  
Brushes with lock-in/lock-out  
Breakaway Device, resettable design.

- NOTES:
- (1) Installation services (non-prevailing wage) are included. Buyer to assist Seller with removal/reinstallation of equipment components that cannot be lifted by hand, if any.
  - (2) Effluent weir & scum baffle NOT included. L-shape scum baffle support brackets are required for baffle cleaning. Bolt protrusions & obstructions NOT allowed.
  - (3) Clarifier equipment and all items not specifically described above are NOT included.
  - (4) Buyer to provide Seller with all required field dimensions and details of existing equipment.

GENERAL

Reference is made in this Proposal to certain Specification Sections. This is done strictly for identification purposes and is not to be construed that Envirodyne Systems Inc. proposes to furnish all items required by the referenced Sections. Only the items specifically mentioned or described in this proposal will be furnished.

Equipment and materials offered are of standard design and will comply with the general intent of the Specifications but may vary in some detail from that specified. Our tender is offered in good faith and we shall not be liable for any costs, direct or indirect, resulting from disapproval by the Owner.

Motors, speed reducers and castings will be given the manufacturer's standard paint and surface preparation and prime coat. Ferrous parts not galvanized to receive one shop coat of approved primer. Finish coats are not included except as noted herein.

DRAWINGS

Included in the price are the necessary General Arrangement and Approval Drawings, Parts Lists and Erection Drawings. Also included are detailed Erection, Maintenance and Operating Instructions.

SERVICES

The optional price below includes the services of a qualified Field Representative for inspection of the Equipment after installation by others or for erection supervision, and for initial instruction of the Owner's personnel in the care, maintenance and operation of the Equipment according to the following schedule:

<u>Equipment</u>	<u>Days</u>	<u>Trips</u>	<u>Reps</u>
Algae Cleaning Systems (ea.)	2	1	2

Additional service is available at a per diem rate of \$1500 plus travel and living expenses.

ESTIMATED SHIPMENT

Based upon present conditions, it is estimated shipment of the Equipment can be made within 8 to 12 weeks after receipt of approved drawings and release for manufacture.

If a delay in shipment, in excess of thirty (30) days is requested after shipment is scheduled then an additional charge of 2% per month of the total price will be added until shipment can be made.

PRICE

Price for EQUIPMENT, DRAWINGS and SERVICES described in this Proposal, F.O.B. Factory with truck freight allowed to the nearest accessible point to the jobsite is:.....\$\*\*\*30,750.00\*\*\*.

Price does not include sales, use and/or other taxes.

TERMS

Net thirty (30) days after date of Invoice for complete or partial shipments to be backed by irrevocable Letter of Credit or Payment Bond. The right is specifically reserved to make and invoice partial shipments.

Interest on past due accounts is charged at 1-1/2% per month. These terms are independent of and not contingent upon the time and manner in which the Buyer received its payments from the Owner.

\* \* \* \* \*

Attachment: General Terms & Conditions

ENVIRODYNE SYSTEMS INC.
General Terms and Conditions

- 1. ACCEPTANCE: (a) This Proposal shall lapse automatically upon the expiration of a period of 30 days after its date of submission set forth below unless it has been previously revoked by Seller. (b) This Proposal shall become a binding contract, as accepted by Buyer, only when approved in writing hereon by an officer of Seller at its home office at Camp Hill, Pennsylvania, (it being expressly agreed that when so executed, such contract shall be considered as being made and entered into at Camp Hill, Pennsylvania).
2. DELIVERY: (a) Any statements relating to the date of shipment of said equipment represent Seller's best estimate, but shipment on such date is not guaranteed. (b) Said equipment shall be delivered F.O.B. the point or points hereinabove specified. If such delivery is prevented or postponed by reason of any embargo, government ruling, strike, accident or other cause beyond Seller's reasonable control, Seller shall be entitled at its option to tender delivery to Buyer at the point or points of manufacture (if other than the point or points specified above), and in default of acceptance to cause the equipment to be stored at such point or points of manufacture at the Buyer's expense. Such tender, if accepted, or such storage shall constitute delivery for all purposes of this agreement, but the purchase price hereinabove specified shall in such case be adjusted by excluding therefrom any freight charges from the point or points of manufacture to such specified point or points. (c) If shipment is postponed at request of Buyer, or due to delay in receipt of shipping instructions, payment of the purchase price shall be due on notice from Seller that said equipment is ready for shipment. Handling, moving, storage, insurance and other charges thereafter incurred by Seller with respect to said equipment shall be for the account of Buyer and shall be paid by Buyer when invoiced. (d) Buyer assumes all risk of loss, destruction or damage to said equipment after delivery thereof as herein specified.
3. INSURANCE: Buyer shall provide and maintain for Seller's benefit, insurance on said equipment against loss from fire, wind, water or other causes with insurance companies legally authorized to do business where said equipment is located in an amount at least equal to the value of said equipment during the period from the time of delivery until said equipment is paid for in full. In no case does the purchase price, even if inclusive of freight, cover the cost of insurance beyond the point of delivery specified in this Proposal; in addition, if the shipping route selected involves movement of said equipment by water, for which the freight rate does not include insurance, Seller may, unless otherwise advised by Buyer, effect marine insurance for the account of Buyer, in which event Buyer shall repay to Seller the cost of such insurance.
4. SECURITY INTEREST: Buyer hereby grants Seller a security interest in the equipment being purchased, which security interest shall continue only so long as all or any portion of the purchase price shall remain unpaid. The security interest secures all other agreements of Buyer under this contract. Upon payment of the purchase price and completion of all other obligations of Buyer the security agreement shall expire without further action of Buyer or Seller.
5. TAXES: Unless otherwise specifically provided herein, Buyer shall reimburse Seller, in addition to the price hereinbefore stated, for all sales, use and other taxes, excises and charges which Seller may pay or be required to pay to any government directly or indirectly, in connection with the production, sale, transportation, and/or use by Seller or Buyer, of any of the equipment, materials or services dealt with herein (whether the same may be regarded as personal or real property). Buyer agrees to pay all property and other taxes which may be levied, assessed or charged against or upon any of said equipment on or after the date of actual shipment, or placing into storage for Buyer's account.
6. CONFIDENTIAL INFORMATION: All information and data herein or furnished to Buyer hereunder relating to price, size, type and design is submitted with the understanding that it is for Buyer's own confidential use and is not to be shown or otherwise made known or available to any third party at any time without Seller's written consent.
7. LIMITED WARRANTY: The Seller shall assign to the Buyer any warranty provided by the manufacturer of any component incorporated into the goods and not manufactured by the Seller. The Buyer agrees that the Seller's assignment of such warranty rights is the Seller's sole obligation to the Buyer, and the Buyer's sole remedy against the Seller, for defects in such components. Subject to this specific limitation applicable to components manufactured by others, the Seller expressly warrants that the goods sold under this agreement will be free from defects in materials and workmanship for a period of one year from their installation into the Buyer's facility or 18 months from the Seller's delivery of the goods to the Buyer, whichever comes first. This express warranty is the Seller's sole warranty with respect to the goods and excludes items subject to normal wear and tear. If the Buyer delivers to the Seller written notice of any defect covered by this express warranty, within the stated warranty period, the Seller shall, at its sole option, promptly repair or replace the defective goods or parts of the goods. If the goods or parts of the goods will be replaced, the Seller will supply the replacement goods FOB its manufacturing location; the Buyer is responsible for shipping arrangements and costs and any applicable insurance. The warranty will be void and of no effect if the goods are modified, without the Seller's express written consent. The warranty excludes defects that are due to improper operation, failure to maintain the goods in accordance with the Seller's recommendations, chemical action or abrasive materials, or abuse of the goods, whether deliberate or otherwise. This warranty remedy shall be the Buyer's sole and exclusive remedy against the Seller for any defect in the goods. ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED.
8. CONFORMANCE WITH LAWS, CODES, ETC.: If applicable laws, ordinances, regulations or conditions require anything different from, or in addition to, that called for by Seller's drawings and specifications, Seller will satisfy such requirements at Buyer's written request and expense upon receipt of proper specifications before commencement of manufacture.
9. PATENTS: Seller will defend at its own expense any suit instituted against Buyer so far as it is based upon claims that any equipment item furnished hereunder in and of itself constitutes an infringement of any presently issued U.S. patent, if notified promptly in writing and given authority, information and assistance (at Seller's expense) to defend and settle the same, and Seller shall pay all damages and cost awarded therein against the Buyer by reason of such infringement. Furthermore, in case the use of said equipment is enjoined in such suit or in case Seller otherwise deems it advisable, Seller shall at its own expense either procure for the Buyer the right to continue using said equipment, or replace the same with non-infringing equipment, or modify it so that it becomes non-infringing, or remove said equipment and refund the purchase price less freight charges and depreciation. Seller shall not be liable for use of said equipment in the conduct of any process not inherent therein nor for infringement resulting from compliance with designs furnished by Buyer. The foregoing states the sole liability of Seller for patent infringement with respect to said equipment.
10. OVERDUE ACCOUNTS: All overdue amounts of the purchase price shall bear interest at the maximum legal rate.
11. DEFAULT: In the event that Buyer becomes insolvent, commits an act of bankruptcy or defaults in the performance of any term or condition of this contract, the entire unpaid portion of the purchase price shall, without notice or demand, become immediately due and payable. In any such event, Seller at its option, without notice or demand, shall be entitled to sue for said balance and for reasonable attorneys' fees, plus out-of-pocket expenses and interest; and/or to enter any place where said equipment is located and to take immediate possession of and remove said equipment, with or without legal process; and/or to retain all payments theretofore made as compensation for the use of said equipment; and/or to resell said equipment at public or private sale, without notice or demand, for and on behalf of the Buyer, and to apply the net proceeds from such sale (after deduction from the sale price of all expenses of such sale and all expenses of retaking possession, repairs necessary to put said equipment in salable condition, storage charges, taxes, liens, collection and attorneys' charges and all other expenses in connection therewith) to the balance then due to Seller for said equipment and to receive from the Buyer the deficiency between such net proceeds of sale and such balance. Buyer hereby waives all trespass, damage and claims resulting from any such entry, repossession, removal, retention, repair, alteration and sale. The remedies provided in this Paragraph 11 are in addition to and not in limitation of any other rights of Seller.
12. MODIFICATION, WAIVER AND RESCISON: This contract shall not be modified or rescinded and no provision hereof shall be waived after it has been approved in writing by Seller at its home office in Camp Hill, Pennsylvania, except by a writing signed by an officer of Seller at said home office. A waiver of any provision hereof in any instance shall not constitute a waiver of the same or any other provision hereof in any other instance and shall not affect or impair in any manner or respect the right of Seller to avail itself of and enforce any of the terms and conditions of this contract subsequent to such waiver.
13. TERMINATION: Buyer may terminate this contract for convenience upon notifying Seller in writing of such fact and paying Seller for all costs and expenses (including overhead) incurred by it in performing its work and closing out the same, plus a reasonable amount thereon as profit.
14. WAIVER OF CONSEQUENTIAL DAMAGES: The Buyer waives any rights it might otherwise have to recover consequential or incidental damages of any kind from the Seller arising from or in connection with this agreement or its breach, whether couched in contract, breach of contract, negligence, strict liability, or any other legal or equitable theory.
15. LIABILITY: Notwithstanding any liabilities or responsibilities assumed by Seller hereunder, Seller shall in no event be liable for lost profit, downtime, operating or maintenance costs or for any other special, indirect or consequential damages. Seller's total liability under all circumstances shall be limited to the total amount actually paid by the Buyer to the Seller for the equipment and/or services.
16. GOVERNING LAW: The Agreement shall be governed by and construed in accordance with the laws of Pennsylvania, disregarding any conflict of laws principles that might require the application of the substantive law of any other jurisdiction.
17. ENTIRE AGREEMENT: Buyer has notice that no agent or representative of Seller has authority to bind Seller by an agreement, promise, representation or statement relating to the matters covered hereby and which are not herein contained. This contract is intended by the parties hereto as the final expression of their agreement and is the complete and exclusive statement of the terms thereof.

SUBMITTED this 4th of December, 2013

BY [Signature]

Robert E. Sheker, P.E. For ENVIRODYNE SYSTEMS INC.

Approved at Camp Hill, PA this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

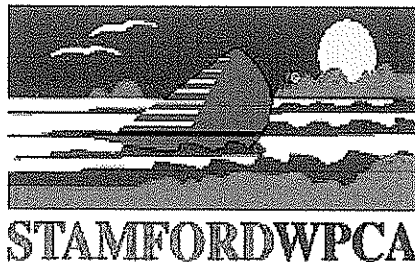
ENVIRODYNE SYSTEMS INC.

By \_\_\_\_\_

ACCEPTED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

By \_\_\_\_\_

William P. Brink, P.E. BCEE  
Executive Director  
Stamford Water Pollution Control Authority  
203-977-5809  
wbrink@ci.stamford.ct.us



Michael Handler, Chairman  
SWPCA Board of Directors  
Stamford Water Pollution Control Authority  
203-977-4182  
mhandler@ci.stamford.ct.us

BUREAU OF WATER PROTECTION AND LAND REUSE  
PLANNING & STANDARDS DIVISION

FEB 28 2014 ✓

February 24, 2014

Mr. Carlos Esguerra, Sanitary Engineer  
Department of Energy & Environmental Protection  
Bureau of Water Protection and Land Reuse  
79 Elm Street  
Hartford, CT 06106

**Re: Permit ID CT0101087 Compliance Schedule Semi-Annual Report**

Dear Carlos,

The Stamford WPCA has continued to evaluate and closely monitor the UV system to determine whether the system can reliably meet the new limits for fecal coliform and enterococci described in Table A, Remarks D, E, and F of the referenced permit. SWPCA staff has conducted tests of the UV system banks and channels to evaluate the relative performance of each, but thus far the tests have been inconclusive, hampered in part by the low flows to the plant over the past year.

In our letter of December 20, 2013 we wrote that we were ready to accept the new limits. We were encouraged that fecal coliform and enterococci testing the past year indicated that the plant met the new bacterial limits except for two occasions, both of which were caused by equipment malfunctions which are understood and correctable. Unfortunately, soon thereafter the UV system had additional malfunctions that led to multiple system shut downs and permit exceedances. We have been in contact with Wedeco (now owned by Xylem), the system manufacturer, to fix the problems, and have also identified some relatively low cost modifications that will improve system performance, including replacing UV light intensity sensors, modifying system control programming, and providing flow measurement in each of the UV channels for better flow pacing of the UV dose. The modifications are expected to be completed by the end of March 2014. Wedeco also changed the system programming to allow SWPCA operators to adjust the set point for UV dosage.

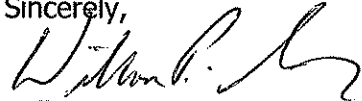
Given the above we would like to do a test of the capability of the UV system to meet the new permit limits from April 1<sup>st</sup> through May 15<sup>th</sup>. This will allow us to run the system at 37 mW-s/cm<sup>2</sup> for 4 to 6 weeks, prior to the bathing season, to better determine the capability of the system to meet the new permit limits. We are hopeful that the system will be able to meet the new limits, and the new limits would then become effective soon thereafter.

Stamford WPCA, 111 Harbor View Ave., Stamford, CT 06902



Should you have any questions, please call.

Sincerely,



William P. Brink, P.E., BCEE  
Executive Director

cc: Michael Handler, Chairman SWPCA Board  
Ernie Orgera, Director of Operations  
William Degnan, Plant Supervisor  
Marie Sabo, Laboratory Director