

TECHNICAL COMMITTEE MEETING
Wednesday, September 18, 2013
2nd Floor Conference Room
Plant Site, 111 Harbor View Avenue, Stamford, CT 06902

5:30 p.m.

Attendees:

Dan Capano	Chairman, Technical Committee
Daniel Schwartz	Committee Member
William Brink	Executive Director, WPCA
Prakash. Chakravarti	Supervising Engineer, WPCA
William Degnan	Plant Supervisor, WPCA
Catherine Mallon	Malcolm Pirnie/Arcadis
Len Sekuler	Malcolm Pirnie/Arcadis
Suman Bopaiah	Malcolm Pirnie/Arcadis

1. Call to Order, Pledge and Roll Call

Chairman Dan Capano called the meeting to order at 5:40 pm.

2. Review and approval of previous meeting minutes.

D Schwartz made a motion to approve the meeting minutes for August 21, 2013 and July 31, 2013 seconded by D Capano. The motion was carried 2-0-0.

3. Presentation on Asset Management – Malcolm Pirnie/Arcadis

B Brink mentioned that he invited Malcolm Pirnie/Arcadis to do a presentation to the Technical Committee describing Asset Management, including examples of Asset Management work they have done for Hartford MDC and Town of Greenwich, CT. Malcolm Pirnie/Arcadis staff made a slide presentation on Asset Management emphasizing their risk based and criticality of service approach to set priorities and develop a transparent capital improvement plan.

4. Update Memo by Wright-Pierce on Odor Control

B Brink presented Wright-Pierce's report on their evaluation of the ventilation rates inside the Sludge Processing Building and their recommendations. He described the need to do air balancing inside the building to capture and treat fugitive odors from the sludge blend tanks as these are currently being released inside the sludge blend tank room which is vented directly to the outside from the top of the building, and to capture and treat the odors from the filtrate wet well (Wright-Pierce's report is being made part of minutes).

D Capano asked B Degnan about the repairs to the scrubbers at the Raw Sewage Pump (RSP) Building. B Degnan stated that he has ordered new sheaves for the RSP odor control fans. D Capano asked if the chemical feed line to the RSP scrubbers is okay. B Degnan said yes. He mentioned that the H2S readings of the discharge from the RSP Building have been low. B Brink

mentioned that chemical pumps for the RSP Building scrubber have been ordered.

D Capano commented that the odor control is being addressed with due diligence. D Capano asked if the odor control systems will be running through winter. B Brink said yes and B Degnan added that he has ordered lumber and insulation to protect the piping to run the system through the winter.

B Brink advised the committee that Wright-Pierce has submitted an additional fee request of \$8,300 for additional services provided beyond their original scope of work. B Brink stated that Wright-Pierce had to troubleshoot the odor control system inside the Solids Processing Building, checked design ventilation rates, and made recommendations for the air balancing to be performed inside the building that was not included in their scope, as well as attend additional meetings (request being made part of the minutes). D Capano made a motion to approve the request, seconded by D. Schwartz, and the motion carried 2-0-0.

5. Procurement of Vac Truck

B Brink stated that currently the WPCA has an old Camel sewer jetting and vacuum truck that is over 20 years old and in need of frequent repairs. He mentioned that the operators have looked at the features of the various jet and vacuum trucks that are currently available and they like the features of the Camel truck. In particular the special feature of consolidating the vacuumed solids and recycling the vacuum water which would reduce by 50% the number of trips back to the plant to empty the solids and to refill the jet tanks during the cleaning operation. This will greatly increase production, i.e. the length of pipe cleaning achieved each day. He is recommending the purchase of a demonstration Camel unit by Super Products, New Berlin, WI and presented the committee with the justification (made a part of the meeting minutes) The demonstration Camel jet and vacuum truck with approximately 280 hours of operation and driven 8,500 miles costs around \$300,000 compared to \$382,000 for a new Camel unit. Other makes cost less, (e.g., \$275,000 for the Vacall), but the special features of the Camel will result in operational savings that will result in a very short payback (less than 1 year) of the additional cost. The Technical Committee agreed to support the bid waiver when it is presented at the next SWPCA Board meeting.

6. Raw Sewage Pump Station replacement of pipe supports.

B Brink stated that the plant staff had recently added new lighting in the lower level of the raw sewage pump building and it was discovered that the base of the pipe supports for the raw sewage pumps' suction and discharge piping had severely corroded due to standing water on the floor over the years and some of the pipe supports had even fallen. B Brink was very concerned and ordered the staff to install temporary pipe supports for the suction and discharge piping on an emergency basis. He also asked Wright-Pierce engineers to inspect the the supports and provide a design if needed modifications or replacement of the pipe supports, which has been done. Wright-Pierce has submitted a proposal for the additional work at a cost not to exceed \$6,500.

7. Capital Projects status updates

P Chakravarti reported that the construction of the Carriage Drive sewer project is going well. Felix Lemone has been hired as clerk of the works for site inspection. He stated that all of the sewer line work in West Hill Road is complete and the crew is working in Carriage Drive. Overall about 6000 linear feet of pipe has been installed.

P Chakravarti also reported that he met with Stantec Engineers to discuss the progress on the Dyke Lane pump. They discussed the options for the standby generator.

8. New Business

B Brink briefed the Committee on a \$7,500 proposal by Woodard & Curran for design of an elevated grated walkway and handrail to replace the crumbling concrete walkway along the UV disinfection tank.

There being no other new business to discuss D Capano asked for a motion to adjourn the Technical Committee. D Schwartz made the motion to do so. Motion carried 2-0-0. The meeting was adjourned at 7:45 pm

TO:	Bill Brink, P.E.	DATE:	September 17, 2013
FROM:	Jeffrey Pinnette, P.E.	PROJECT NO.:	12742A
SUBJECT:	Stamford, CT WPCF – Odor Control Solids Processing Building – Ventilation System Assessment		

This memorandum summarizes the investigation of the existing ventilation systems in the Solids Processing Building at the Stamford WPCF. The goals of the investigation included:

- Determine which spaces are directed to the odor control systems and the design ventilation rates,
- Assess whether there are any additional spaces that ought to be tied to those systems, and
- Determine if any adjustments to the ventilation rates are recommended either to provide better odor containment for existing spaces, such as the Filtrate Pump Station and/or the Blend Tanks, or to facilitate connecting additional spaces to the odor control systems.

The attached figure is a schematic of all of the make-up and exhaust air systems within the building including spaces that are not part of the odor control system. Table 1 summarizes the make-up air and exhaust ventilation for each of the existing spaces.

The existing Solids Processing Building (SPB) includes the sludge thickening, blending, and dewatering facilities as well as sludge drying facilities. The odor control systems include two separate 25,000-cfm scrubbers, and a regenerative thermal oxidizer (RTO) which treats the exhaust from the drying process. As shown in the attached figure, the first of the two SPB scrubbers treats the exhaust from the thickening, blending and dewatering areas, and is referred to as the Dewatering scrubber. The other scrubber treats exhaust from the Drying Area and provides supplement ventilation of the Dewatering Area when outside temperatures are greater than 40°F, and is referred to as the Drying scrubber

The exhaust flow rate to the two scrubber systems was recently reduced to the design flow of 25,000 cfm, and was previously drawing approximately 50% higher flow rates. The reduction in

exhaust flow rate was needed to allow the scrubbers to perform as intended. Based on observations of odor emissions from the Filtrate Pump Station and Blend Tanks, it was determined that rebalancing of the system is needed to ensure that all spaces are ventilated at the intended rates. This investigation was identified as a preliminary step to establish the ventilation rates that should be provided throughout the system, and as noted above to determine if any adjustments to the design of the system ought to be implemented.

Findings of Investigation:

The following are the key findings of the investigation:

- The general ventilation in the Drying Area is providing about 3.8 air changes per hour (AC/hr). The exhaust air is directed to odor control through a combination of the drying train exhaust to the RTO and the flow to the Drying scrubber. The ventilation rate on the low side, but should be sufficient to provide adequate odor containment.
- The Drying Area also has an emergency heat relief system that is not directed to odor control. It appears that this system was only intended to operate on rare occasions. The frequency of operation should be confirmed with Synagro.
- The intended ventilation rate of the Filtrate Pump Station and Blend Tanks provides greater than 12 AC/hr. This is typically sufficient to provide adequate odor containment.
- The Gravity Belt Thickener Area is ventilated to the odor control system at 7.1 AC/hr. This could be reduced to provide capacity for other purposes.
- The Belt Filter Press Area is ventilated at 7.9 AC/hr to the Dewatering scrubber. The supplemental ventilation when ambient temperatures exceed 40°F directs an additional 11.4 AC/hr to the Drying scrubber. The overall ventilation rate results in greater than 19 AC/hr when both systems are operating. This is a very high exhaust rate even for belt filter presses. As previously recommended, addition of an oxidant to the sludge feed may be more beneficial in improving working conditions than the high ventilation rates. A new enclosed dewatering would require significantly lower ventilation rates in the range

of 3 to 6 AC/hr. Either of these options would provide capacity for other spaces to be ventilated to odor control, and would reduce heating costs.

- The Loading Bay also has very high ventilation rates of 16.6 AC/hr, especially since the loading bay is only utilized when the sludge drying facility can not accept all of the sludge produced by dewatering. A lower ventilation rate should be feasible, and would free up capacity to direct other spaces to odor control.

Based on the investigation of the ventilation system, all of the odorous sources within the building were intended to be directed to odor control, except for the emergency heat relief system for the Drying Area as noted above. However, two more significant issues were identified that appear to be contributing to fugitive odor emissions from the SPB as follows:

- The Polymer Room is not exhausted to odor control, since there are no significant odor emissions from polymer make-down systems. Subsequent to the WWTF upgrade in 2005, a strain press was installed in the Polymer Room for screening of the sludge prior to dewatering to remove rags and other contaminants. This improves the quality of the sludge prior to drying to produce a beneficial use product. It is not clear whether the strain press was installed as part of the Drying Facility improvements in 2007 or later. In any case, the strain press results in odorous emissions, and there was no modifications to the exhaust system to direct either a vent line or the general room exhaust to one of the odor control systems. Thus, the Polymer Room exhaust is directed to atmosphere resulted in untreated odor emissions.
- The Blend Tanks have direct vent lines that are connected to the odor control system, but the room ventilation in the Blend Tank and Sludge Pump Room is vented to atmosphere. The current odor containment at the Blend Tanks is inadequate, and sulfides are being released into the room. The general room exhaust is being utilized to maintain acceptable working conditions in the room, but this results in untreated odor emissions.

Another potential source of fugitive emissions is the Loading Bay. The design ventilation rates call for a higher make-up air rate than exhaust rate. The corrective action would simply be to reduce the flow rate of the make-up air system to be about 10% less than the exhaust rate. This can be done through a change in the sheave for the fan in the unit. This reduction must also account for any reduction in the exhaust rate to the Loading Bay as discussed further below.

Recommended Modifications:

Based on the findings noted above, the follow modifications are recommended:

- In the short term, rebalance the exhaust system to the Dewatering Scrubber, and increase the target exhaust rate from the Filtrate Pump Station and the Blend Tanks based on 24 AC/hr as shown in Table 2. The increase in exhaust rate can be balanced by reducing the exhaust rate in either the GBT Area or the Loading Area.
- In the longer term, implement the following relatively low-cost capital improvements to improve odor containment:
 - Connect the exhaust from the Blend Tank and Sludge Pump Room to the Dewatering scrubber system, unless the short-term improvements are completely effective in eliminating sulfide emissions from the Blend Tanks to the room.
 - Connect the exhaust from the Polymer Room to the Dewatering scrubber system to contain and treat the emissions from the strain press operation.
 - Table 2 summarizes the proposed changes to the exhaust rates as well as the proposed reduction in the exhaust rates from the GBT Area and the Loading Bay to accommodate the additional areas being connected to the Dewatering scrubber. The ventilation rate in the GBT Area would still provide 4 AC/hr and in the Loading Bay 12 AC/hr. The make-up air rates would be reduced in each area to provide about 10% less make up air than the revised exhaust rate. This will reduce heating requirements in the overall building.
 - WPCA staff has noted that there is a sump pump wetwell in the Loading Bay that should have a direct vent to the odor control system. This will reduce odors in the

Memo: Solids Processing Building – Ventilation System Assessment
September 17, 2013
Page 5

Loading Bay, and make it more feasible to reduce the overall exhaust rate in the Loading Bay.

Stamford WPCF

Table 1. Existing Ventilation Rates in Solids Processing Building

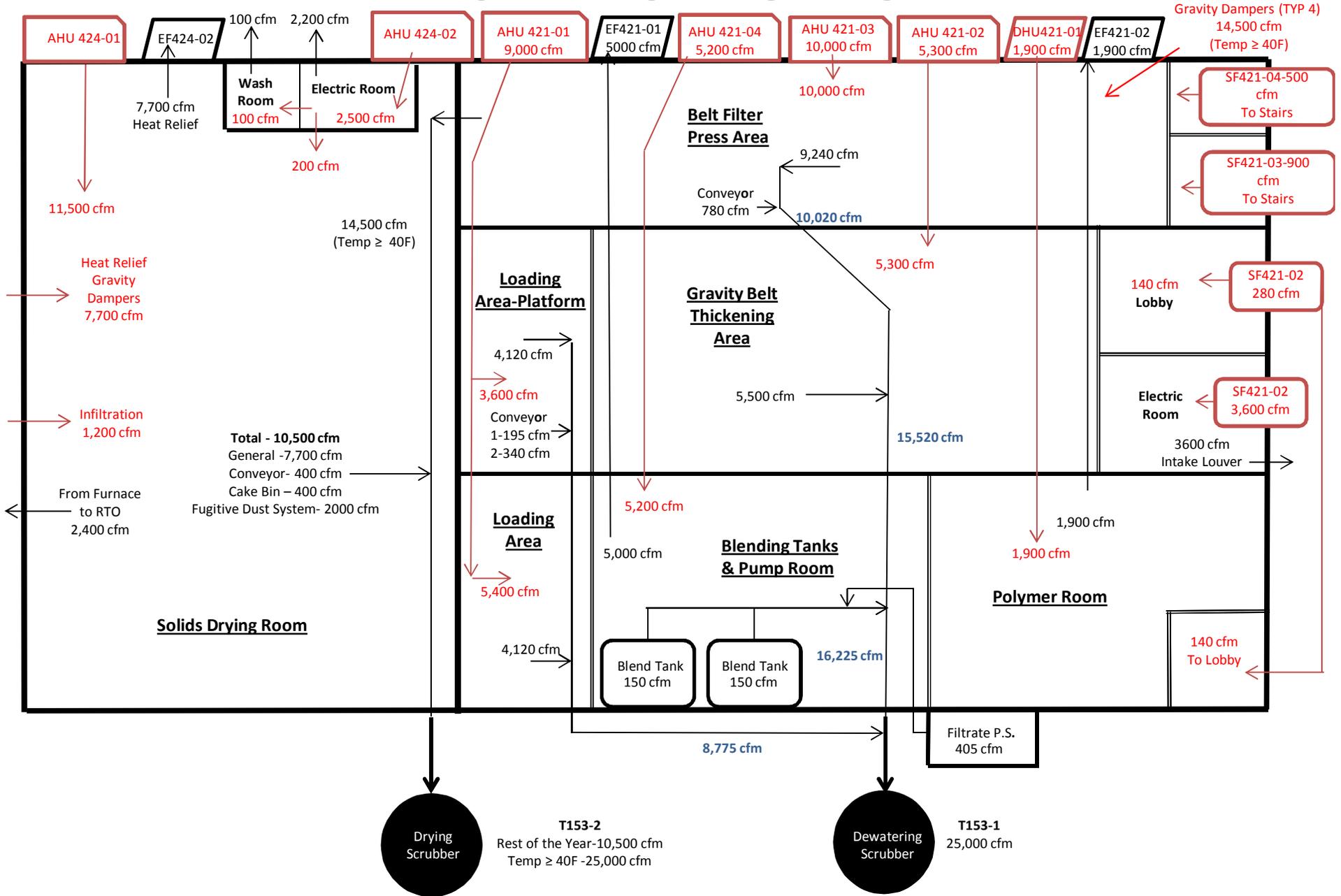
Area	Volume (ft3)	Air In (cfm)	Exhaust Out (cfm)	Current AC/Hr	Exhausted to:	Comments
Drying Area:						
Dryer thru RTO	202,608	11,500	2,400	0.7	RTO	
SPB-Dryer Scrubber	202,608		10,500	3.1	SPB-Dryer Scrubber	
Sub-Total	202,608	11,500	12,900	3.8		
Heat Relief Exhaust Fan	202,608	7,700	7,700	2.3	Atmosphere	Inlet thru gravity dampers
Total	202,608	19,200	20,600	6.1		
Filtrate P.S	1,931		405	12.6	SPB-Dewatering Scrubber	
Blending Tanks and Pump Room						
Exhaust Fan to Atmosphere	13,778	5,200	5,300	23.1	Atmosphere	
Blending Tanks Vents	1,400		300	12.9	SPB-Dewatering Scrubber	
Total	13,778	5,200	5,600	24.4		
Polymer / Strain Press Room	36,485	1,900	1,900	3.1	Atmosphere	
Gravity Belt Area - 2nd FL.	46,203	5,300	5,500	7.1	SPB-Dewatering Scrubber	
Belt Filter Press Area - 3rd FL.						
SPB-Dewatering Scrubber	76,201	9,800	10,020	7.9	SPB-Dewatering Scrubber	
SPB-Drying Scrubber - T>40F	76,201	14,500	14,500	11.4	SPB-Dryer Scrubber	Inlet thru gravity dampers
Total	76,201	24,300	24,520	19.3		
Loading Area:						
Loading Area Platform	13,556	3,600	4,120	18.2	SPB-Dewatering Scrubber	
First Floor Loading Area	18,113	5,400	4,120	13.6	SPB-Dewatering Scrubber	
Loading Conveyor Vents	31,669		535	1.0	SPB-Dewatering Scrubber	
Total	31,669	9,000	8,775	16.6	SPB-Dewatering Scrubber	Inlet > Exhaust
Non-Process Areas:						
Electric Room	10,508	3,600	3,600	20.6	Atmosphere	
Lobby		280			Atmosphere	
Stairs		1,400			Atmosphere	
Total Exhaust Rate to Scrubbers:						
SPB- Dewatering Scrubber			25,000			
SPB - Drying Scrubber			25,000			

Stamford WPCF

Table 2. Proposed Ventilation Rates in Solids Processing Building

Area	Volume (ft3)	Air In (cfm)	Exhaust Out (cfm)	Current AC/Hr	Exhausted to:	Comments
Drying Area:						
Dryer thru RTO	202,608	11,500	2,400	0.7	RTO	
SPB-Dryer Scrubber	202,608		10,500	3.1	SPB-Dryer Scrubber	
Sub-Total	202,608	11,500	12,900	3.8		
Heat Relief Exhaust Fan	202,608	7,700	7,700	2.3	Atmosphere	Inlet thru gravity dampers
Total	202,608	19,200	20,600	6.1		
Filtrate P.S	1,931		775	24.1	SPB-Dewatering Scrubber	
Blending Tanks and Pump Room						
Exhaust Fan to Atmosphere	13,778	2,100	2,200	9.6	SPB-Dewatering Scrubber	
Blending Tanks Vents	1,400		560	24.0	SPB-Dewatering Scrubber	
Total	13,778	2,100	2,760	12.0		
Polymer / Strain Press Room	36,485	1,900	2,010	3.3	SPB-Dewatering Scrubber	
Gravity Belt Area - 2nd FL.	46,203	2,800	3,100	4.0	SPB-Dewatering Scrubber	
Belt Filter Press Area - 3rd FL.						
SPB-Dewatering Scrubber	76,201	9,800	10,020	7.9	SPB-Dewatering Scrubber	
SPB-Drying Scrubber - T>40F	76,201	14,500	14,500	11.4	SPB-Dryer Scrubber	Inlet thru gravity dampers
Total	76,201	24,300	24,520	19.3		
Loading Area:						
Loading Area Platform	13,556	2,350	2,400	10.6	SPB-Dewatering Scrubber	
First Floor Loading Area	18,113	3,200	3,250	10.8	SPB-Dewatering Scrubber	
Loading Conveyor Vents	31,669		535	1.0	SPB-Dewatering Scrubber	
Sump Pump Wetwell Vent			150		SPB-Dewatering Scrubber	
Total	31,669	5,550	6,335	12.0	SPB-Dewatering Scrubber	
Total Exhaust Rate to Scrubbers:						
SPB- Dewatering Scrubber			25,000			
SPB - Drying Scrubber			25,000			

Stamford WPCF -Sludge Processing Building-Existing Ventilation Rates



September 16, 2013
W-P Project No. 12742A

Mr. William Brink, P.E.,
Executive Director
Stamford WPCA
111 Harbor View Avenue
Stamford, CT 06902

Subject: Stamford WPCA
Proposal for Additional Odor Control Engineering Assistance

Dear Bill:

As discussed, Wright-Pierce has completed the scope of work presented in our proposal letter dated March 29, 2013 related to providing odor control assistance for the Evaluation of the Sludge Drying Facility air discharges and the evaluation of the existing packed-bed odor scrubbers. The results of these evaluations were presented to the Stamford WPCA in a series of technical memoranda.

Since that time, Stamford has requested that Wright-Pierce provide additional assistance related to the evaluation of odor sources and potential means to control these sources. In general, these services consisted of the following:

- Conducting an additional site visit to investigate odor emissions from the Sludge Blending Tanks and Filtrate Pump Station.
- Obtaining a proposal from an air balance and testing firm to perform air balancing on the Solids Processing Building odor control system.
- Preparing a technical memorandum and associated sketches and schematics to provide information for conducting the air balance work.
- Preparing a technical memorandum presenting our findings from an analysis of the spaces exhausted to the odor control scrubbers serving the Solids Processing Building.

Based on the recommendations of the technical memorandum analyzing spaces exhausted to the odor control scrubbers, there may be additional services requested of Wright-Pierce by Stamford. Therefore, in addition to the costs associated with services already provided, we have included an estimated cost of \$5,000 for additional, to be determined services. We recognize that the level of services requested by Stamford could vary and that this budget estimate may need to be adjusted as services are defined.

As with the original services, we propose to provide our services on a time charge basis at our standard hourly rates per our original agreement. The estimated cost for the additional, as-requested work is approximately \$8,300.00. Therefore, we respectfully request that our not-to-exceed fee for Odor Control Engineering Assistance be increased from \$32,200.00 to \$40,500.00.

William Brink, P.E.
September 16, 2013
Page 2 of 3



We appreciate the opportunity to assist the Stamford WPCA in addressing these important odor control concerns.

Sincerely,
WRIGHT-PIERCE

A handwritten signature in black ink, appearing to read "Jeffrey R. Pinnette".

Jeffrey R. Pinnette, P.E.
Project Manager

A handwritten signature in black ink, appearing to read "John W. Braccio".

John W. Braccio, P.E.
Sr. Vice President

Enclosure



WRIGHT-PIERCE HOURLY RATES - 2013

Position	Hourly Rate
Principal-in-Charge	\$191.08
Project Manager	\$147.94
Sr. Technical Advisor	\$147.94
Sr. Project Engineer	\$110.95
Project Engineer	\$92.46
Sr. Project Engineer - Civil	\$126.36
Sr. Project Architect	\$126.36
Sr. Project Engineer - Structural	\$117.12
Project Engineer - Mechanical	\$123.20
Sr. Project Engineer - Instrument.	\$143.31
Sr. Project Engineer - Electrical	\$143.31
Sr. Engineering Technician	\$73.92
Engineering Technician - Drafter	\$61.64
Admin. Assistant	\$53.94

Reimbursable expenses will be invoiced at actual costs

Justification of Bid Waiver to Purchase a New Jet and Vacuum Truck

Leading manufacturers of Jet and Vacuum Trucks:

- Camel by Super Products, New Berlin, WI
- Vacall by Gradall Industries, New Philadelphia, OH
- Vactor by Vactor Manufacturing, Streator, IL

Special Features of the Camel Jet and Vacuum Truck:

1. An ejector debris unloading system allows operators to de-water excess liquid in the collection tank and maximize the volume of collected waste solids per trip. As a result, return trips needed for emptying the waste solids at the WPCF are reduced by 50% (from an estimated 2 - 5 trips per day, to 1 - 2 per day), saving 2.5 to 5 hours per day; and increasing the time devoted to sewer jetting and cleaning by 50%.
2. ~~Single engine drive allows vacuum, water and hydraulic pump to operate while~~ transmission is in neutral. Water pump is driven by a front crank shaft mounted, closed loop hydrostatic system offering infinite variable control without effecting the vacuum system. Vacuum pump is driven by 10-bolt hot shift PTO. Lower sound levels, reduced maintenance requirements, and less fuel consumption are associated with this single engine drive system;

Other Features of the Camel Jet and Vacuum Truck:

3. Hydraulic vacuum boom has a 210 degree rotation range; vertical lift up to 16 feet; lifting capacity up to 1000 pounds; and 255" reach from centerline of unit;
4. Front mounted control console makes the operator's job safer and efficient for operating many functions including: unit's water supply; water flow control for jetting; electronic engine throttle; water pressure gauge; reel directional valve; reel speed control; and pendant and handgun connections;
5. A high torque, variable speed, and synchronous positive displacement vacuum pump ensures maximum vacuum and air flow at all engine speeds and allows material to be vacuumed above or below the surface. Other vacuum features: no adjustments; no oil changes/lubrication; no metal to metal contact or gears; quieter (no gear backlash noise or high speed gear whine); handles torque loads on higher horsepower applications; performs at 100% from idle to full speed; simple (no intermediate gear boxes, clutches, or electronics);

6. A positive displacement triplex water pump produces smooth-acting, surge free flow and pressure for maximum cleaning and reduced fatigue on the water system. Mid-mount hose reel and containment shield relieves the weight on the front axle, tires, and suspension; allows complete air flow to the engine radiator; no obstruction to the driver; and flexibility to maneuver and position operations;
7. Debris and water tank 10-year warranty. Debris entry into the body is further away from vacuum pump filters, thus reducing clogging and degrading of the vacuum pump. High strength steel tank results in less flexing under vacuum or transporting activities. Water tank is polyethylene with quick fill (both sides of tank) are filled simultaneously with a cross over;
8. Dual exhaust porting reduces the air being evacuated from the debris tank and further reduces the dreaded plugging of vacuum filters;
9. Cyclone separator is an industrial rated tapered cyclone with collection box. Removes particles 50 micron and larger;
10. Plenum chamber reduces velocity of the air stream and allows residual material to fall from the air stream; and,
11. A hydraulic tube rack stores 48 feet of 8" diameter tubes; does not increase the working width of truck; opens up valuable tool space along truck sides; and is convenient for cleaning tubes at rear of vehicle.

Justification for Use of Bid Waiver to Purchase a Camel Jet and Vacuum Truck:

1. The Camel has unique features that increase the efficiency of sewer cleaning by as much as 50% compared to other manufacturers.
2. WPCA mechanics are pleased with the current Camel jet and vacuum truck that is at the end of its useful life, and the services of the manufacturer.
3. The Camel's cost is substantially higher than the Vacall and Vactor (\$382,000 for Camel compared to \$275,000 for the Vacall).
4. A demonstration unit (having 200 hours of operation, mileage of 5,761 as of May 8, 2013) is available from Camel at a cost of \$308,400. WPCA staff have inspected the demonstration unit and determined that it will best meet our needs at a considerable savings compared to the purchase of new unit.
5. It is recommended that a bid waive be used to procure the demonstration unit a cost of \$308,400.



W. H. ROSE



9 Route 66 East • Columbia, Connecticut 06237 • Telephone (860) 228-8258 • Fax (860) 228-8313

May 8, 2013

Prakash Chakravarti
City of Stamford
Ref: Sewer and Catch Basin Cleaning Truck (Demo Unit)

Mileage: 5,761 Hours: 200

2012 International 7500SBA 6x4 cab and chassis with Camel model "200" 10YD Vac machine installed and operational per the attached specifications, this unit is available for immediate delivery and will include full factory warranty and training.

Complete Package: \$294,000.00

Options

- 1: 420gpm trash water pumping system installed.....\$9,900.00
The trash pump is a hydrotech hydraulic pump capable of discharging liquid from the debris body at 420 gallons a minute.
- 2: Lateral line cleaning kit 150' x 1/2" hose with on/off high pressure valve on curb side of the unit installed.....\$4,500.00
The lateral line cleaning kit is manufactured by Haney and is equipped with 150'x1/2" hose with high pressure on/off valve, the reel is mounted on the curb side.

Respectfully Submitted,

Ed Frisbie
Ed Frisbie

ACCEPTANCE OF PROPOSAL: The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do work as specified.

ALL WARRANTY CONSIDERATIONS MUST BE APPROVED AND DONE AT OUR FACILITY IN COLUMBIA, CT.

Authorized Signature: _____

Date: _____



W. H. ROSE



9 Route 66 East • Columbia, Connecticut 06237 • Telephone (860) 228-8258 • Fax (860) 228-8313

May 8, 2013

Prakash Chakravarti
City of Stamford
Ref: Sewer and Catch Basin Cleaning Truck (Factory Order)

2013 International 7500SBA 6x4 cab and chassis with Camel model "200" 10YD Vac machine installed and operational per the attached specifications, this unit would be a factory order and will include full factory warranty and training.

Complete Package: \$368,000.00

Options

- 1: 420gpm trash water pumping system installed.....\$9,900.00
The trash pump is a hydrotech hydraulic pump capable of discharging liquid from the debris body at 420 gallons a minute.
- 2: Lateral line cleaning kit 150' x 1/2" hose with on/off high pressure valve on curb side of the unit installed.....\$4,500.00
The lateral line cleaning kit is manufactured by Haney and is equipped with 150'x1/2" hose with high pressure on/off valve, the reel is mounted on the curb side.

Respectfully Submitted,

Ed Frisbie

ACCEPTANCE OF PROPOSAL: The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do work as specified.

ALL WARRANTY CONSIDERATIONS MUST BE APPROVED AND DONE AT OUR FACILITY IN COLUMBIA, CT.

Authorized Signature: _____

Date: _____



Camel

SEWER & CATCH BASIN CLEANERS

EASY TO OPERATE. EASY TO CLEAN. EASY TO MAINTAIN.



 **Super Products**
TRUCK MOUNTED VACUUM EQUIPMENT

800.837.9711 • www.superproductscorp.com

CAMEL® MAKES ANY JOB EASIER

Since its introduction more than 35 years ago, municipalities and sewer contractors have relied on Camel's versatility and proven performance to complete the toughest of sewer cleaning jobs.

Sanitary Sewers

Clean intricate networks of underground pipes, pumps and lift stations to enable visual inspection

Storm Sewers

Remove dirt, grit and other debris build up from storm sewer lines, catch basins, lift stations and culverts to ensure effective water flow

Water Treatment Plants

Clean grit from chambers, sludge pits and bar screens, as well as remove sludge from lagoons

Municipal Water Departments

Clear out areas prior to fixing water main breaks, repairing fire hydrants and cleaning valve boxes

Hydro Excavation

Perform a variety of hydro excavating functions including potholing, exposing utility lines, removing debris and other digging projects safely and effectively

General Cleaning and Washing

Clean streets, wash signs and perform many other general cleaning and washing tasks

VISIT SUPER PRODUCTS ONLINE FOR ADDITIONAL INFORMATION!

PROVIDING MAXIMUM PERFORMANCE

A Water Tanks

Constructed of 3/8" (9.5mm) rotationally-molded, non-cross linked polyethylene with ultraviolet stabilizer for strength and durability, the tanks offer capacity up to 1500 gallons (5,677L) of water

B Aluminum Tubing

Rugged aluminum tubing with available storage of up to 48' (14.6m) on rear door. Optional hydraulic fold down rack available

C Tailgate

When closed, the tailgate is secured by a manual latch system or an optional hydraulic over-center latch system

D Collector Body

The debris collector body is constructed of 1/4" (19mm) Exten high-strength, low-alloy, abrasion-resistant steel designed to withstand vacuum levels of 367" (93.22mm) of water.

Body sizes are available that offer debris capacities of 6.5 cu yd (4.9m³), 10.8 cu yd (8.2m³) and 16 cu yd (12.2m³)



E Super Pak Dewatering System

Coupled with the ejector plate technology, the Camel's Super Pak dewatering and compaction system removes excess liquid through a 6" (152.4 mm) drain located on the front of the collector body

F Storage Boxes

Customize your own storage for tools and accessories with a wide selection of different sized storage boxes



ANCE, CONVENIENCE AND COST SAVINGS SINCE 1976

G Hydraulic Boom

Offering a true "tube-inside-the-tube" design for smooth and precise operation, the Camel's 8' hydraulic telescopic boom is capable of providing a vertical lift up to 22' (6.71m), extending up to 26' (7.92m), and lifting up to 1000 lbs (454 kg). And the 8" (203.22mm) I.D. vacuum system comes with a reinforced elbow to ensure strength and durability.

For operator convenience, all boom positioning functions can be performed using the standard removable wired pendant or an optional wireless remote control



K Single Engine Design

Lower sound levels, reduced maintenance and less fuel consumption result from the Camel's single engine design. This unique design also allows the vacuum, water and hydraulic pumps to operate efficiently while transmission is in NEUTRAL



H Hose Reel

The Camel's hose reel can be front- or mid-mounted on the unit. The front-mounted hose reel (as shown) offers manual 180° rotation and has capacity up to 1000' (304.8m) of 1" (25.4mm) hose. The mid-mounted hose reel, which can hold 600' (182.9m) of 1" (25.4mm) hose, features hose reel tensioning and automatic level wind system to make it the industry's easiest reel to operate

I Front Mounted Control Console

A front-mounted control console makes it easy and safe to operate many functions including the Camel's water and vacuum pumps; PTO on/off switches; water flow control and pressure gauge; electronic engine throttle; reel directional valve and speed controls; and pendant and handgun connections. For even greater convenience, a wireless, remote control system is also available

J CAN Bus Wiring

Simple CAN bus wiring system with LED digital display screen replaces individual analog wiring systems and offers quick, convenient troubleshooting to reduce vehicle downtime



L Unique Ejector Plate Unloading!

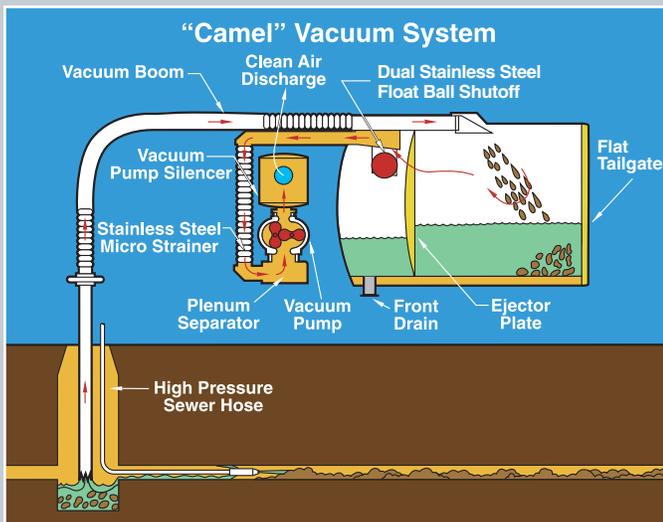
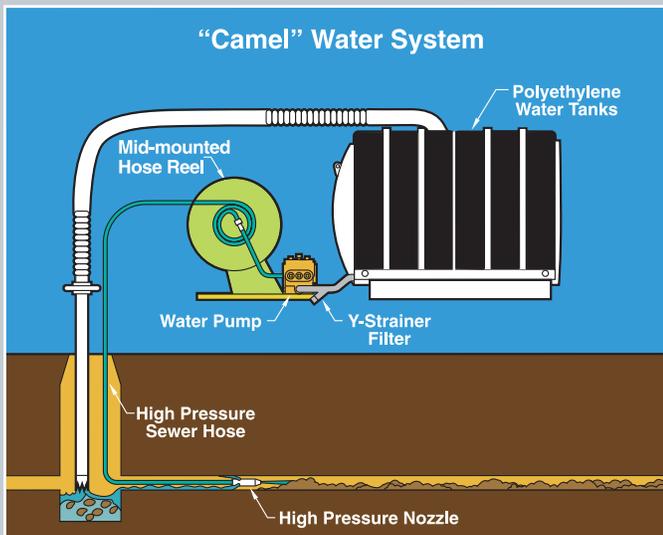
The Camel is the industry's only combination unit that features Super Products' ejector plate unloading system. This system safely and effectively removes all debris from the collector body with minimal cleanup, and an internal body flush-out system makes cleanup fast and easy at the dump site. To prevent over filling the collector body, an automatic stainless steel dual float ball system is in place.

For operators who prefer a dump body unit, the Camel is also available with the standard "tip-to-dump" method that raises the body up to a 50° angle with a telescopic hydraulic cylinder. All controls for discharging debris are located curbside of chassis cab

ADDITIONAL FEATURES AVAILABLE ON THE CAMEL INCLUDE:

- ✓ *Stainless Steel Fenders*
- ✓ *Dual Water Fill System*
- ✓ *Reinforced Steel Boom Elbow*
- ✓ *Vacuum Vent Door*
- ✓ *Remote Grease Boom Function*

UNPARALLELED WATER & VACUUM SYSTEM RESULTS IN PROVEN PERFORMANCE



Camel's Water System in Operation

Utilizing a superior Triplex water pump design, the Camel water system provides smooth acting, surge-free flow and pressure for maximum cleaning performance as well as reducing fatigue on the water system itself.

Camel's Vacuum System in Operation

Pioneered and developed by Super Products, the use of a positive displacement vacuum pump ensures maximum vacuum and air flow at all engine speeds and allows material to be vacuumed above or below the surface. And with the high vacuum levels and CFM generated by the positive vacuum pump, no material is too deep or far away from the unit to convey.

FOR ADDED VERSATILITY, THE CAMEL OFFERS THREE MODES OF CONVEYING MATERIAL

AIR CONVEYANCE

Like a centrifugal fan, the air conveyance mode moves material with air. With this method, air must be present to convey material.

PURE VACUUM

The pure vacuum mode moves material with vacuum similar to a vane-type pump used in septic tank units. This method moves material with pure vacuum.

FLUIDIZING TUBE

A combination of both methods, the Fluidizing Tube removes material from beneath the liquid surface by pure vacuum, then injects air into the system to carry material into the collector body via air conveyance.

The Camel offers a powerful combination of water jetting pressure up to 2500 PSI, up to 80 GPM, and air flow to 5000 CFM/18 hg to quickly and efficiently complete the job.

HYDRO EXCAVATING CAPABILITY

Super Products offers an optional package that provides the tools to turn the Camel into a powerful hydro excavating unit including cartridge filters, dig tubes and specially-designed water lances.

Coupled with the unit's solid water jetting and vacuum performance, these features allow operators to safely and effectively expose utility lines, remove debris and clean out a variety of structures, dig in congested spaces and perform many other hydro excavating applications.



CAMEL'S UNIQUE FEATURES INCREASE PRODUCTIVITY, CONVENIENCE AND COST SAVINGS

Ejector Plate Unloading

Only Camel® offers Super Products' exclusive ejector plate technology. This safe, easy-to-use and maintenance-free unloading system provides fast, thorough debris removal and makes washdowns quicker. And since there's no need to raise the collector body to unload, debris removal can be done in areas where a traditional dump body may be limited due to overhead obstructions or unstable ground.

Super Pak Dewatering System

Camel's Super Pak dewatering system can increase on-the-job productivity while reducing time and costs associated with debris removal.

Utilizing this material and water separation process, operators can easily move the ejector plate to speed up the draining process and squeeze out up to 98 percent of the liquid through a 6" drain located on the collector body.

The increase in debris capacity that results can lower operating fuel costs as fewer trips to the dump site will be needed. And the drier loads are less messy to remove than those with a traditional dump body unit.

Water Recycling System

Potable Water Savings of 40% or More!

Good for the environment and your budget, the Camel's wastewater recycling system can significantly reduce your need for potable water as well as lower costs associated with your crews leaving the job site to purchase it.

Simply fill the system with fresh water and, true to its name, the environmentally-friendly Camel allows your crews to work all day without the need to stop frequently to replenish the unit's fresh water supply.



From its ejector plate unloading and dewatering system to its water recycling capability, Super Products' Camel sewer and catch basin cleaner is truly unlike any other combination unit on the market today!



Learn more about the Camel's Unique Ejector Plate Unloading, Dewatering and Water Recycling Systems!

View or request a copy of our Camel product demonstration video today at: www.cameleasy.com

IN ADDITION TO ITS CAMEL COMBINATION SEWER CLEANERS, SUPER PRODUCTS' PRODUCT LINE INCLUDES:



Camel Jet® Water Jetting System

An affordable and valuable addition to any fleet, our Camel Jet offers high-pressure water jetting to effectively keep municipal sewers, sanitary and storm sewer lines, laterals, and drainage lines clean and free flowing.



Mud Dog® Hydro Excavators

A safe and effective alternative to traditional digging equipment, Super Products offers several Mud Dog units including our compact 6-yard debris tank model - the Mud Dog 650 - that is ideal for operation in tight municipal settings.



Supersucker® Vacuum Trucks

Only Super Products offers the original Supersucker vacuum truck. Ideal for industrial and environmental cleanups, this unit is easy to use and offers high-power suction to pneumatically convey solids, liquids, sludges or slurries.

COMMITTED TO CUSTOMER SERVICE... YESTERDAY, TODAY AND TOMORROW

Super Products has been providing the industry with outstanding customer service since 1972. Whether determining the best equipment solution for their specific needs; providing their crews with product training and technical assistance; or quickly providing aftermarket parts and consumables to minimize their equipment downtime, our customers know that Super Products is committed to support them every step of the way.

We're quite proud of the reputation that has been earned over the years, and our team that is in place today is equally committed to providing customers with the service they've come to expect from Super Products.

Distributor Network

As well as having an experienced customer service team operating out of our Wisconsin-based headquarters, Super Products has a well-established network of distributors and representatives throughout the United States to support our customers serving municipalities. International representatives are also in place to serve customers worldwide.

VISIT OUR WEBSITE TO EASILY LOCATE THE DISTRIBUTOR COVERING YOUR AREA



Super Products offers on-site demonstrations as a convenient, cost-effective way for customers to experience the Camel first hand.



800.837.9711 • www.superproductscorp.com

Super Products LLC
17000 W. Cleveland Avenue, New Berlin, WI 53151 USA
P: 262.784.7100 F: 262.784.9561 E: info@superproductscorp.com

Super Products LLC reserves the right to make changes or amend any of the information contained in this publication without prior notice.

Your authorized Super Products representative

September 16, 2013
W-P Project No. 12742A

Mr. William Brink, P.E.,
Executive Director
Stamford WPCA
111 Harbor View Avenue
Stamford, CT 06902

Subject: Stamford WPCA
Proposal for Raw Sewage Pump Station
Pipe Support Engineering Assistance

Dear Bill:

At the City's request, Wright-Pierce is providing engineering assistance to replace the failing pipe supports at the Stamford Water Pollution Control Facility (WPCF) Raw Sewage Pump Station. We have prepared this proposal letter to define the scope of services and our anticipated fee for this project.

Scope of Services

Staff at the Stamford WPCF identified that several of the pipe supports for the Raw Sewage Pump Station suction and discharge piping were corroded and were failing or had failed. There is concern that the unsupported pipe could be subject to a catastrophic failure due to the considerable weight of these pipe sections and fittings. The WPCF staff obtained temporary supports and shoring for these pipes on an emergency basis which are currently being installed. To provide for a longer term solution to replace the failing pipe supports, Stamford requested assistance from Wright-Pierce. The following scope of services is being provided as part of this request:

- One of our senior engineering technicians visited the WPCF to develop information relative to the existing pipe supports (locations, type of support, etc.).
- Based on the information obtained during the field visit and existing base plans provided by the Stamford WPCA, Wright-Pierce developed three sketches showing the proposed scope of work to demolish the failing pipe supports and to either replace them in-kind or to replace the existing steel supports with concrete pads. To prevent recurrence of the corrosion problems experienced previously, the new steel pipe supports will be placed on a concrete pad to keep the steel base plates up off the floor and out of the water.
- Once the sketches have been reviewed by the Stamford WPCF staff, we will work with the City to either develop a bid package to obtain the services of a contractor to install new pipe supports or will work with the City to obtain quotes from specific contractors to complete the work.



Proposed Fee

We propose to provide our services on a time charge basis at our standard hourly rates similar to our on-going work to provide odor control engineering assistance to the City. Our standard hourly rates are presented in the attached table. The estimated cost for the additional, as-requested work is approximately \$6,500.00.

We appreciate the opportunity to assist the Stamford WPCA in addressing these important structural pipe support concerns.

Sincerely,

WRIGHT-PIERCE

John W. Braccio, P.E.
Sr. Vice President

Enclosure



WRIGHT-PIERCE HOURLY RATES - 2013

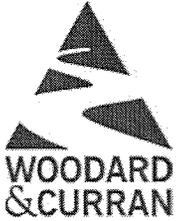
Position	Hourly Rate
Principal-in-Charge	\$191.08
Project Manager	\$147.94
Sr. Technical Advisor	\$147.94
Sr. Project Engineer	\$110.95
Project Engineer	\$92.46
Sr. Project Engineer - Civil	\$126.36
Sr. Project Architect	\$126.36
Sr. Project Engineer - Structural	\$117.12
Project Engineer - Mechanical	\$123.20
Sr. Project Engineer - Instrument.	\$143.31
Sr. Project Engineer - Electrical	\$143.31
Sr. Engineering Technician	\$73.92
Engineering Technician - Drafter	\$61.64
Admin. Assistant	\$53.94

Reimbursable expenses will be invoiced at actual costs

COMMITMENT & INTEGRITY
DRIVE RESULTS

40 Shattuck Road
Suite 110
Andover, Massachusetts 01810
www.woodardcurran.com

T 866.702.6371
T 978.557.8150
F 978.557.7948



August 5, 2013

Mr. William Brink
Water Pollution Control Authority
111 Harbor View Avenue
Stamford, CT 06902

Re: Chlorine Contact Chamber Walkway Structural Condition Inspection

Dear Bill:

Woodard & Curran Inc. (Woodard & Curran) is pleased to present you with our proposal for consulting engineering services for the Stamford Water Pollution Control Facility (WPCF). As discussed with Paul Dombrowski of our office, structural concerns were raised about the condition and safety of the walkways around the chlorine contact chamber.

This proposed scope and budget for this task includes final design details and specifications for the demolition and replacement of the existing tank walkway and associated construction cost estimate.

We propose to perform this task on a time and materials basis for a Not to Exceed fee of \$7,500 and will commence work within two weeks from notice to proceed.

We very much appreciate this opportunity to provide the Stamford Water Pollution Control Authority with engineering services. Please indicate approval of the proposal by signing both copies of the Engineering Services Agreement and Woodard & Curran's Terms and Conditions, return one copy to us and retain one copy for your records.

Please contact me at vspada@woodardcurran.com or Paul at pdombrowski@woodardcurran.com if you have any questions or require additional information.

Sincerely,

WOODARD & CURRAN INC.

Vincent W. Spada, PE, LSP
Project Manager

VWS:ams
226154.03

Enclosure(s)

cc: W&C File



**ENGINEERING SERVICES AGREEMENT
BETWEEN
WOODARD & CURRAN INC.
AND
STAMFORD WATER POLLUTION CONTROL AUTHORITY
FOR A
CHLORINE CONTACT CHAMBER WALKWAY DEMOLITION AND REPLACEMENT AT THE
STAMFORD WATER POLLUTION CONTROL FACILITY
JULY 2013**

A. SCOPE OF SERVICES

Woodard & Curran Inc. (CONSULTANT) will provide consulting engineering services to Stamford Water Pollution Control Authority (CLIENT) for the purposes of demolition and replacement of the chlorine contact chamber walkway at the Stamford Water Pollution Control Facility (WPCF). The following tasks will be performed as part of this Agreement.

WALKWAY STRUCTURAL DEMOLITION, AND REPLACEMENT

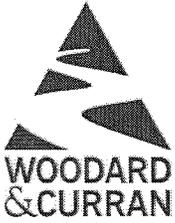
We will obtain and review the original design plans of the walkway, including construction details of its attachments to the tank structure. We will perform an on-site visual assessment in order to verify conditions, determine the limits of required demolition, identify any necessary incidental repair work, and establish a design and support concept for the new aluminum grating platform. We will develop final construction details and specifications for the required demolition, replacement, and incidental repairs.

DELIVERABLE

Three (3) paper copies and one (1) electronic copy of the final design details and specifications.

ASSUMPTIONS

- CLIENT will provide CONSULTANT with prompt access to the WPCF site.
- CLIENT will provide CONSULTANT with copies of requested original design plans.



SCHEDULE

The schedule for the following project milestones is as follows:

- Initiate project within two (2) weeks of written authorization to proceed.
- Site inspection report technical memorandum within four (3) weeks of authorization to proceed.
- Design plans and specifications within two (2) months of authorization to proceed.

B. FEE

CONSULTANT will complete the services described in scope item A on a time and materials basis Not to Exceed \$7,500.00.

CONTRACT APPROVAL SIGNATURES

The attached Standard Terms and Conditions are made part of this Agreement.

IN WITNESS THEREOF, Woodard & Curran Inc., by its duly authorized Officer, and the Stamford Water Pollution Control Authority, by its duly authorized Representative, have executed this Engineering Services Agreement, as the date and year written below.

DATED at Stamford, Connecticut this _____ day of _____ 2013.

By:

WOODARD & CURRAN INC.

A handwritten signature in black ink, appearing to read "J.G. Sheehan", with a long horizontal flourish underneath.

Jay G. Sheehan, PE
Senior Vice President

By:

STAMFORD WATER POLLUTION CONTROL AUTHORITY

William Brink
Executive Director