

EAST WINDSOR WATER POLLUTION CONTROL AUTHORITY

Pump Station Alarm System Upgrade & Clarifier Changeover



Randy Robbins, EIS, setting up RACO alarm unit.

November 2009 continued to be both a busy and productive month for the East Windsor WPCA. In addition to our normal activities, we upgraded 8 of our 10 pump station alarm systems and performed our annual fall rotation of the secondary clarifiers.

After finishing our Pump Control Upgrade last month, we realized we were also pretty far behind the times regarding our “call out” alarm system for our pump stations. We were still running with Ademco VISTA-20 security system alarms that had been installed around 1996. The units had worked well for us, but we were starting to experience loss of functions with the units. Combine this with the statewide change from 7 to 10 digit telephone numbers, and the time seemed right. We have been very happy with our RACO Catalyst alarm system at the main facility, so we decided to look into other RACO products that would suit our needs at the pump station.

With the help of Environmental Instrument Services, Inc (EIS) we decided that the RACO Guard-It Alarm Autodialer would best serve our needs. We had installed one loaner unit for several months to verify it would perform as advertised. We found it to be sound and performed accordingly.

Konrad Karolczuk researched cost and found a very good price with USA Bluebook if we ordered ten units. The Catalog price for the Autodialer, Power adapter and Batter Backup was listed at \$1,044.50 per unit. Our negotiated price per unit stood at \$927.03, saving \$117.47 per unit and \$1,175 total savings.

The RACO Guard-It unit is designed to monitor conditions at remote facilities and place telephone calls to personnel, delivering specific pre-recorded messages. The product may also be programmed to call numerical display pagers in addition to regular phone numbers.

We also can elect to call the Guard-It at any time from any telephone, to check the pump stations for alarm conditions or status. We hope to soon tie these RACO Guard-It Alarm Autodialers and our new Pump Station Controls back to our main computer system (SCADA System) at our plant.



WPCA Operator Marc Brennan trying to read 29 year old electrical schematics and wiring diagrams during our alarm installation..

SECONDARY CLARIFIER ANNUAL FALL ROTATION

Spring and Fall have historically been a reminder for us to rotate our Secondary Clarifiers. We've practiced rotating equipment since our new facility went online in 1995. By rotating each piece of equipment it allows us to keep hours and wear equal, hopefully prolonging the life of each piece of equipment. Once dropped out of the rotation, the equipment can be inspected and maintained so that when next called upon, it is ready.

It is also a State of Connecticut Department of Environmental Protection Water Bureau requirement that when equipment is taken off line, even for scheduled maintenance, a Bypass Notification Log as well as a Bypass Report Form shall be submitted.

According to DEP, "Bypass" means the diversion of wastes from any portion of the wastewater collection or treatment facilities, with examples of bypasses within the sewage treatment facility being as follows:

- Complete or partial bypass of any process in the facility due to infiltration, heavy rain, equipment failure or planned work.

At first the idea of having to phone the DEP for something scheduled and follow this up with written log and report for a scheduled maintenance item may seem odd. But, in essence, this is protection for the treatment plant and the receiving stream. The DEP visits each treatment plant regularly, unannounced. When they notice a piece of equipment offline, they ask both why and also if we created the proper notification. What they are trying to guard against is broken equipment that is not functional being left within the process loop. At some point this piece of equipment may be needed. If it isn't available, a possibility of untreated wastewater being discharged into the receiving stream exists. This could create a health or safety hazard.

We have two Secondary Clarifiers at the East Windsor Treatment Plant, each with the following dimensions:

- 75' in diameter x 15' of side wall depth (SWD)
- 496,000 total volume each (0.5 MG)
- 4,418 square feet of surface area each

Associated with our Secondary Clarifiers are two First Stage Chlorine Contact Chambers and a Second Stage Final Contact Chamber. The First Stage Chambers are rotated at this time also, and the Final Stage Chamber is drained, inspected and cleaned.

Additionally, we have three KSB RAS Pumps (Return Activated Sludge) and two KSB WAS Pumps (Waste Activated Sludge) that we rotate along with the tanks.

It can be up to a weeklong process to drop tanks, add tanks and rotate the pumps. Once the new equipment is placed online, then we start to inspect and perform maintenance on the equipment taken offline. This portion of our preventative maintenance program is a twice a year occurrence.



View into the empty clarifier during our East Windsor Operations staff Maintenance and Cleanup.

Edward Alibozek, Acting Superintendent WPCA
November 2009