



Industrial Pretreatment Made More Efficient, Representative through the Use of YSI Technology

Anyone involved in wastewater treatment facility (WWTF) operation and maintenance knows that, of all the potential problems that could arise in a facility, the greatest singular threat is toxic influent from industrial waste discharges. A well-operated, well-maintained WWTF can be brought to complete upset – and to effluent permit violations – in a matter of hours through the introduction of acids, bases, or toxins (i.e., metals, solvents) to the facility.

The US EPA has established specific criteria and regulations for the pretreatment of industrial waste discharges to wastewater collection systems, and requires that discharges are monitored and regulations are enforced. However, these requirements are not always followed and accidents do happen, placing the condition of the receiving WWTF and its effluent quality in danger. At the front line of defense of every WWTF receiving industrial waste influents are the industrial waste pretreatment coordinators and their monitoring staffs.

Don Calvert heads the industrial waste sampling and analysis program for the City of Akron, Ohio. Industries typical to the city

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Don Calvert *City of Akron, OH*

are manufacturers of adhesives, synthetic rubber, polymers, resins, and organics; metal plating; metal coating and anodizing; and food processing—the waste streams of which flow to Akron’s municipal WWTF. To protect this facility, Calvert and his staff monitor industrial discharges for pH, temperature, cyanide, organics, and a variety of metals. The work is tedious, technical, time-consuming, and can be dangerous. “Every [sampling] location is different,” reports Calvert, “the monitoring point might be in a tank, trough, or pipe, in the plant itself, or in the middle of the road...”

For a number of years this program was conducted using historical practices involving frequent visits to each monitoring location and collecting samples for lab analysis

using a combination of manual grabs and automated samplers for collection. As the program grew and personnel resources became more limited, Calvert began searching for alternatives. His search led him to discover the availability of a number of YSI 6920 multiparameter water quality monitoring sondes.

Considering that the use of this technology might be a viable option, Calvert contacted Steve Fondriest of Fondriest Environmental, YSI’s representative in Ohio. Calvert and

Fondriest discussed pretreatment monitoring and the suitability of YSI 6920 technology for this application. Calvert and his colleagues acquired ten 6920 sondes and began redesigning their program to include the new technology.

At the beginning of the program, the staff of Fondriest Environmental provided training on calibration, maintenance, and deployment of the sondes. During this training, Fondriest Environmental evaluated all sensors and sondes using diagnostics found within the sonde software, as

well as with data analysis features found in YSI’s EcoWatch® for Windows®. EcoWatch is a software package that complements the easy-to-use sonde software by providing options for data analysis, presentation, and file management.

The YSI 6920 sondes allow Calvert and his staff to keep up with routine site visits, as well as allowing them to perform special projects and studies. The 6920s are easily concealed and can accurately monitor water quality parameters (pH, temperature, conductivity, and dissolved oxygen) discretely and continuously in many of the worst environments. These are distinct advantages especially considering that, at many sites, industrial waste is discharged 24 hours a day, and that accidents and unauthorized discharges do not always occur during routine site visits. “With the use of our 6920s we have cut our trips in half and collect data that more accurately describe the discharges being monitored,” reports Calvert.



YSI 6920 deployed at a metal coating/metal anodizing industrial waste pretreatment site.

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