INFICON

DETECT TO PROTECT™

CASE STUDY

With A Fuel Oil Spill Threatening Its Water, New York State Municipality Makes Quick Decisions, Averts Water Supply Shutdown Thanks To INFICON

"The INFICON field analysis equipment proved to be an amazing tool for decision-making in an ever-changing environment … emergency responding agencies should seriously consider the acquisition of these units for appropriate public health and safety response to time-critical incidents like chemical releases and water contamination." – Official report from City of Rome (N.Y.) on fuel oil spill.

SECTOR

Government

PRODUCT DEPLOYED

HAPSITE GC/MS Systems with SituProbe (Purge and Trap) and Headspace accessories.

CHALLENGES

- Fuel oil spill threatening public water supplies
- Incomplete information; fast-changing environmental conditions
- Traditional laboratory analysis too time-consuming
- Quick decisions needed on whether to shut down public water system

RESULTS

- Accurate testing results in minutes rather than multiple hours
- Quicker, better decisions to protect public health
- Water supply uninterrupted; with traditional methods, a shutdown would have been necessary
- Public health threat averted.
- Minimal negative publicity

SUMMARY

In February 2006, officials in the City of Rome received chilling news: A fuel oil spill was threatening local public water supplies. Rome provides drinking water to about 37,000 residents and approximately additional 15,000 customers in adjacent water districts. With Volatile Organic Compounds (VOCs) from the oil spill apparently moving into the water supply's filtration system, quick decisions had to be made – yet traditional laboratory analysis would take up to 12 hours. Fortunately there was an alternative. INFICON's HAPSITE testing equipment produced accurate results in minutes. With reliable information upon which to base decisions, officials were able to avoid a water supply shutdown.

ABOUT INFICON

A leading developer, manufacturer and supplier of vacuum instrumentation, critical sensor technologies and process control software, INFICON manufactures a portable gas chromatograph-mass spectrometer (GC/MS) instrument to provide VOC chemical detection for emergency response and security markets.

THE CHALLENGE: FAST ACCURATE INFORMATION

The call to the Oneida County (N.Y.) Health Department came on February 14, 2006. Source water for The City of Rome's public water system had reportedly been contaminated by an accidental spill of #2 fuel oil. Representatives from the county health department, the New York State Department of Health and the New York State Department of Environmental Conservation were on site within a day – but the action plan was far from clear.

Though the spill only involved an estimated 25-30 gallons, nobody knew how much fuel oil had poured into the intakes at the city of Rome's Gate House in the Town of Lee – and any amount of VOCs is a public health concern. All gates/valves into the transmission from the dam were closed to prevent flow of water to the Water Treatment Plant. Compounding the tension: The Lee Water District (population served 3,150) would run out of

water in only 2.5 days if the Rome plant stayed closed. In addition to the inconvenience to residents, emergency crews might not have enough water to perform their jobs in the event of a fire.

"We had to consider the time lag between traditional chemistry sample submissions (minimum of 12 hours) and the need and risk of not producing water," wrote the author of a city report about the incident.

THE SOLUTION: INFICON AND HAPSITE

The city's mayor, noting that the water treatment plant needed to get back on line as soon as possible, asked state and county officials for assistance in finding timelier laboratory support. One suggestion: contacting INFICON of Syracuse for field analysis. Rome officials soon learned INFICON makes portable, rugged and weatherproof GC/MS instrumentation for the Department of Defense and for public health and environmental organizations. Because INFICON's field portable instruments can provide accurate, actionable results in about 15 minutes, they are ideal for emergency situations like the one in Rome – providing analysis of volatile organic chemicals in air, soil and water. Within 45 minutes of a telephone call from the mayor, INFICON was dispatching personnel and equipment - three HAPSITE GC/MS Systems and accessories - from its Syracuse factory.

The company provided the personnel and equipment as a service to the community "and an opportunity for us to further test our equipment and procedures," said INFICON R&D Chemist Les Volles, who supervised the INFICON crew during its visit. "It is one of the best ways to understand the needs of our customers and develop new applications."

Once on site, it took the INFICON employees about one hour to set up and calibrate their equipment. They then began rapid field-testing of raw, settled and finished water. With samples being analyzed about every 30 minutes, the INFICON equipment soon was finding low levels of VOCs - but the news was generally good. The trend: VOC "hits" were lessening and water quality was improving. Armed with fast information they could rely on, this gave public health officials the confidence to keep the treatment plant open and the water flowing to Rome and its customers.

According to the report: "We had achieved operation awareness and process control capability in this situation with the arrival of INFICON's sampling units and their 15-minute turnaround time."

If INFICON's quick-testing instruments hadn't been available, "The water treatment plant would have been shut down until the contamination passed and the plant was "clean" as determined by off-site laboratory test results," said Volles, the INFICON chemist. "Without the information it would be better to err on the side of caution and assume the worst-case scenario. They were extremely worried. Shutting down the treatment plant … presented safety concerns (fire fighting, boiling water, illness risk, etc.) as well as an inconvenience."

LESSONS LEARNED

One lesson, according to the city's report, is that fluid, real-life situations require fast analysis so decisions can be made on the fly.

"The INFICON field analysis equipment utilized in this incident proved to be an amazing tool for decision-making in the ever-changing environment of this event," the city's report noted. "… the availability and utility of the (INFICON) field equipment was invaluable."

KEY RECOMMENDATION

According to the City of Rome's official report: "The New York State Department of Health and other emergency responding agencies (e.g. HAZMAT) should seriously consider the acquisition of these (INFICON) units for appropriate Public Health and Safety Response to time critical incidents (e.g. chemical releases, water contamination)."