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Envirosight

**QUICKVIEW®**

PORTABLE ZOOM  
INSPECTION CAMERA

# GETTING THE LOWDOWN

QuickView pole-mounted camera system gives facility managers an observation tool for planning repairs, maintenance or further inspection

By Gil Longwell

Underground facilities do not develop maintenance needs according to a convenient schedule. Municipal and utility crews can benefit from a method that quickly pinpoints problems so that they can plan an immediate repair, schedule maintenance or repair work, or perform more detailed inspections, as conditions dictate.

In particular, muni-

cipalities need a tool that enables inspection of newly built sanitary and storm sewers before they take on ownership and maintenance responsibility. Contractors bidding on underground repair work need an understanding and overview of the project in order to prepare cost estimates.

The QuickView zoom camera from Envirosight LLC is designed to fill such needs. This pole-mounted camera system is intended to empower facility managers to focus their maintenance, repair, and inspection dollars where they can be most effective.

The camera lets operators see defects, note their locations relative to the manhole access point, and capture a permanent photographic record.

In June, Envirosight staff members Mike Vislay (Northeast field sales specialist) and Kelvin Cherrington (operations manager) demonstrated the QuickView system at a storm sewer inlet on the grounds of the Hampden Township (Pa.) Wastewater Treatment plant. Dave Cassel, sales representative for PA Public Works Equipment Co., the local distributor, took part as well.

## Walk-around

The system demonstrated included a telescoping carbon-fiber positioning pole with a spring-loaded targeting and stabilizing fixture (foot), a zoom camera with two lights attached to its housing, control box, battery pack, video recorder/viewer, and a harness



Kelvin Cherrington looks into the view screen of the QuickView camera system from Envirosight LLC as his right thumb controls the focus, zoom and record functions. His left hand steadies the camera, positioned about 12 feet below the surface.

that resembled a bright safety vest.

When the system is assembled and ready to use, the operator has one item easily carried in one hand: the positioning pole with lights and camera securely attached. The operator wears the battery pack, the video recorder/display, the control box, and battery pack on a vest-like harness. This positions the control box on the operator's hip. At this location, the joystick that controls the zoom and focus features and the lamp

and on-off switches are in easy reach.

Separate controls on the Sony GV-D1000 viewer/recorder can record MPEG video clips or JPEG stills to a MemoryStick, while longer video recording is done on a DV cassette. The camera is connected to the control box through an armored cable and to the recorder/display through a conventional cable. Inspection images can be recorded in any of three formats, while the BNC video signal output allows connection



## TECHNOLOGY TEST DRIVE

### EQUIPMENT:

QuickView zoom camera

### MANUFACTURER:

Envirosight LLC, Randolph, N.J.  
866/936-8476  
www.envirosight.com

### LOCATION OF DEMO:

Hampden Township, Pa.

### DEMONSTRATED BY:

Mike Vislay, Northeast field sales specialist; and Kelvin Cherrington, operations manager



The QuickView Camera, resting on its positioning foot in a storm sewer drop box (left) and at the bottom of a sewer manhole positioned to look upstream.



At left, Mike Vislay changes lenses on the camera that features an 18:1 optical zoom, 12:1 digital zoom and 216:1 total zoom. At right, Vislay checks the internal pressure in the camera. The pressurized interior prevents leakage into the camera.

**“Being able to incorporate a picture of the problem and its location into a software tool that lets managers assign maintenance priorities is really important when getting the most out of a maintenance dollar.”**

Mike Vislay

to almost any video recording platform.

The supplied software enables the data to be imported into WinCan pipe survey software and popular GIS and database applications. The system enables inspection and image and data capture in pipes from 6 to 60 inches. A quick lens change enables inspection of vertical sides of manholes, storm sewer drop boxes, and tanks.

The optional wide angle lens allows for a standard, 45-degree field of view to become a 90-degree field of view. In most cases this captures a complete half of the structure being inspected. The camera has 18:1 optical zoom, 12:1 digital zoom, and 216:1 total zoom. With optimal inspection applications like 18-inch concrete storm pipe, a user can evaluate pipe conditions up to 400 feet. Two individually controlled, high-intensity discharge lamps and diffusing

lamp covers are included. Battery life ranges from four to six hours.

### Operation

Cherrington, an experienced operator, took about 10 minutes from the time the vehicle was parked at a manhole to begin inspection. After a quick at-the-manhole adjustment to the targeting fixture that made sure the camera was positioned to look down the centerline of the pipe, image and data gathering began. He showed the “find, focus, measure” routine that technicians quickly adopt:

- Find a defect, using zoom capability to look down the pipe.
- Focus on the defect.
- Measure the distance to the defect using the camera’s range-finding capability.

The operator will either find defects or blockages or see an unobstructed view to the next manhole. The fourth activity, “record,” can be a continual process from “find” to “measure,” or a series of snapshots taken at “focus” and “measure.”

“A full moon at the end of the pipe is a good sign,” Vislay observed. “When

**The camera is field pressurized with nitrogen from a small canister. This positive pressure helps keep moisture out.**



Kelvin Cherrington prepares to lower the QuickView system into a storm drain. The entire system — data and video recording equipment, battery pack, camera and pole — is seen in this view.

you see a full moon, it means the view through the pipe is unobstructed; there are no obstacles, no signs of collapse and no streams of water cascading into the pipe that block the view. It means no problem was found.”

The inspection was carried out from grade level, without confined-space entry and its associated costs and risks. Cleanup of the equipment is easier than for a crawler camera and its attachments, although the demonstrators said disinfection is a prudent end-of-day precaution.

The camera is used primarily in pipes, and the larger the diameter, the greater the camera’s reach. That is because larger diameter pipes enable illumination from the two onboard lights to be more effective at greater distances. With all camera controls within thumb’s reach, Cherrington could

zoom to and focus on objects as far as 400 feet away. The camera and lights performed without limitation.

Cherrington showed how the system can be assembled, worn, carried and used effectively by a single operator. After quickly changing the lens and snapping diffusers onto the lamps, Cherrington inspected the manhole used to access the sewer line. By lowering the camera into the manhole until it reached bottom, rotating it so that it faced the opposite side of the manhole, then withdrawing it, he inspected the entire manhole structure from top to bottom in less than two minutes.

### Observer comments

Field get-ready-time, the time to gather data at a manhole, and the equipment breakdown and storage time were all brief. Operator safety and



Above, the QuickView camera, cable and control box are transported in the larger case while the smaller case transports the Sony GV ProPack recording system. At right, the QuickView system's video and data information can be sent directly into a wide range of truck-mounted video capture systems.



comfort are addressed in several ways. While nearly the entire positioning pole may be inserted into a manhole, only



QuickView shows distance to in-focus targets onscreen. This helps correlate taps to residences, troubleshoot backups, and identify the location of problem areas.

the bottom of the targeting fixture, a round rubber ball, actually contacts the interior of the manhole. This diminishes the portion of the tool that may require cleaning or disinfection and diminishes operator exposure to pathogens.

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Mike Vislay

Appropriate operator safety issues for working in traffic are necessary.

Whether used with the carry-along video display/capture system or in connection with a capture system in a support truck, the tool delivers the camera's video feed and its embedded data quickly and reliably.

Using truck-mounted recording equipment or the harness-supported recorder, technicians will see no practical difference in field activities. Battery life should not be an issue for a conscientious operator who powers down the lights and other equipment when not in use. Fully loaded, the harness is not cumbersome or uncomfortable.

The quick-start guide provided with the QuickView system is comprehensive and detailed enough to get new users

well down the line and successfully using the system.

#### Manufacturer comments

The demonstrators observed that the QuickView system by itself is not for every inspection job. They emphasized that its ideal use is for spotting problems, which later can be inspected in more detail, if necessary, with a crawler camera. This procedure is much faster and more affordable than inspecting all lines with a crawler system.

“Being able to incorporate a picture of the problem and its location into a software tool that lets managers assign maintenance priorities is really important when getting the most out of a maintenance dollar,” says Vislay.

He noted that EnviroSight's ongoing QuickView enhancement program draws on feedback from system owners, dealers and field personnel for product refinements and innovations. One example: The newly introduced carbon-fiber positioning pole is stronger and lighter than its metallic predecessor, which means that it has less flex when fully extended. A soon-to-be released feature will provide for the addition of digital text information to captured

visuals — a customer-initiated idea. Auxiliary lighting is in the works for larger sanitary pipe, as well as a combination cleaning specific unit.

Refinements and enhancements are nearly universally applicable to models already in the field. ♦

#### MORE INFO:

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866/936-8476  
www.envirosight.com