

# Role of a Certified Operator: the State Perspective

Vicky M. Carrier, P.E.

Sanitary Engineer 3

CT Department of Public Health

Drinking Water Section

Operator Certification Program

# An Operator's Role in Public Health



# Walkerton- a brief history

- Rural community of 5000 people
- Approx. 110 miles NW of Toronto, Ontario in Canada
- Water system managed by local utilities commission
- Operators were grandfathered (no formal training)



# Walkerton- the events of May 2000

- 💧 Heavy rainfall, May 8 to 12, 2000
- 💧 Well 5- primary source of water; chlorine levels not checked; *operator records fictitious numbers in the chlorine log*
- 💧 May 15, 2000
  - 💧 Well 5 turned off, well #7 turned on (*chlorinator was broken*)
  - 💧 water samples taken at the workshop (*labeled well#7 raw, well#7 finished, 125 Durham Street*)
  - 💧 1 distribution sample taken, also 3 additional samples taken from a water main construction site

# Walkerton- the events of May 2000 (cont.)

- 💧 May 16, 2000; samples taken on May 15, 2000 are taken to the laboratory
- 💧 May 17, 2000
  - 💧 Lab reports that construction site samples are TC+ and E.coli+
  - 💧 the other samples did not look good but the laboratory needed more time to be sure
  - 💧 Health department *not* notified by either laboratory or operator

# Walkerton- the events of May 2000 (cont.)

## 💧 May 18 2000

- 💧 widespread illness at the hospital
- 💧 *Stan (operator) informs his supervisors that there are no problems with the system.*

## 💧 May 19 2000

- 💧 more illness, Dr. calls local health unit (LHU)
- 💧 *Stan contacted twice by LHU; he reports NO problems with the system; he knew of one E.Coli positive sample and that the chlorinator on well#7 was broken*
- 💧 New chlorinator is installed and Stan begins flushing and super-chlorinating the system

# Walkerton- the events of May 2000 (cont.)

## 💧 May 20 2000

- 💧 It is now seven days after the suspected contamination
- 💧 *LHU calls Stan again; he tells them that he has a residual but still does not report the E.coli positive samples*

## 💧 May 21 2000

- 💧 Hospital confirms E.Coli in the stool of a patient
- 💧 Additional sample are collected
- 💧 LHU issues BOIL WATER ORDER
- 💧 *Stan does not provide any other information*

# Walkerton- the events of May 2000 (cont.)

## 💧 May 22 2000

- 💧 Stan informs LHU that well#6 is inoperable due to electrical problems
- 💧 Ministry of Environment asked for lab results
- 💧 *Stan asks his brother Frank to revise the operation report to show that well#7 was functioning with a chlorinator*
- 💧 *First victim dies*

# Walkerton- the events of May 2000 (cont.)

## 💧 May 23 2000

- 💧 *Stan turns the altered operation report for well#7*
- 💧 Lab notifies the Local Health Unit that the May 21<sup>st</sup> samples were positive for TC+ and E.coli.
- 💧 LHU makes Stan aware of the result.
- 💧 Stan tells them about the May 15<sup>th</sup> results
- 💧 Well#5 is the only well that tests positive for E.coli
- 💧 Second victim dies

# Walkerton- the events of May 2000 (cont.)

## 💧 The final tally

- 💧 7 people died
- 💧 27 suffered from hemolytic uremic syndrome
- 💧 2300 people were sickened
- 💧 economic impact of 155 million \$\$

## 💧 Walkerton Operators

- 💧 Inquiry found that that the operators did not appreciate the public health risks nor did they understand that chlorination was necessary.

# But it never happened in Connecticut...

Waterborne Norovirus (Norwalk-like) outbreak at a youth camp in the summer of 2002

- 💧 Illness affected approximately 140 people (22% of total population)
- 💧 Illness affected both campers and staff
- 💧 System was also issued an E.Coli violation

# Other situations

## CONNECTICUT:

- 💧 Bristol Water Department issued an E.Coli violation in September 2005. Follow up Consent Order mandated:
  - 💧 additional operator training (beyond renewal requirements)
  - 💧 consultant hired to do a detailed assessment of the operations, infrastructure, emergency response plans and managerial and financial capacity.

## NORTHEAST:

- 💧 Washington County Fair in New York-E.coli outbreak in 1999 (hundreds of sickened, one 4-year old child died, some children have long term effects requiring dialysis)

# Bristol: Don't Drink The Water

By ROBERTO GONZALEZ  
COURANT STAFF WRITER

## Bacteria Found During Testing

ected because it uses boiled water, at the hospital laundry is adding bleach to its loads.

STOL — City officials urged resi- The four samples were taken from ing and cooking.

Checko stressed that those who hav

*September 24, 2005*

# City looks to lift 'no drink' order

## Elevated coliform levels trigger water emergency

### WHAT TO DO

Until the water emergency is lifted, the Bristol-Burlington Health District is urging those who rely on city water to boil it for a minute before using it for cooking or drinking.

People can also use bottled water, said Patricia Checko, director of the health agency.

She said that people should throw out ice cubes made with city water.

The other precaution that applies generally, Checko said, is to brush teeth with boiled or bottled water.

"There is no problem with using the water for hand washing or bathing," the health district said in a statement.

"They said on the radio I shouldn't drink the water, but what I want to know is how this happened," said resident Anita Jameson. "Water is supposed to be treated and clean and safe."

The problem first showed up when a Massachusetts laboratory, Spectrum Analytical Inc.,

See WATER, Page A3

THURSDAY — October 13, 2005

Vol. 135, No. 245

Bristol, Ct

# Water crisis raises planning questions

## Need for better emergency response system, lack of firm plan and poor communication highlighted.

By STEVE COLLINS  
The Bristol Press

BRISTOL — The city's handling of the recent tainted-water crisis highlighted the need for a better emergency response system at City Hall, officials and experts said.

They said the lack of both a firm plan and streamlined communication made it possible to

spread misinformation to the public — and initially left the director of the Bristol-Burlington Health District out of the loop when word of possibly contaminated water began filtering out to the community on Sept. 23.

The city got lucky that the situation wasn't worse, said Robley Newton, the former emergency planning coordinator for the city.

"One of these days, it's not going to be a simple thing," Newton said, so officials should fix the management issues quickly.

Resident Tom Dickau said

that when he heard conflicting stories from official sources about how the city's water could be used safely that day, he immediately grasped that the city wasn't ready to deal with the problem adequately.

He said he remembered thinking "they're blowing it" because they didn't have present a coherent and reasonably complete picture of the issue for the public to digest.

Patricia Checko, director of the health district, said she agrees there should have been a single spokesperson from the

See WATER, Page A2



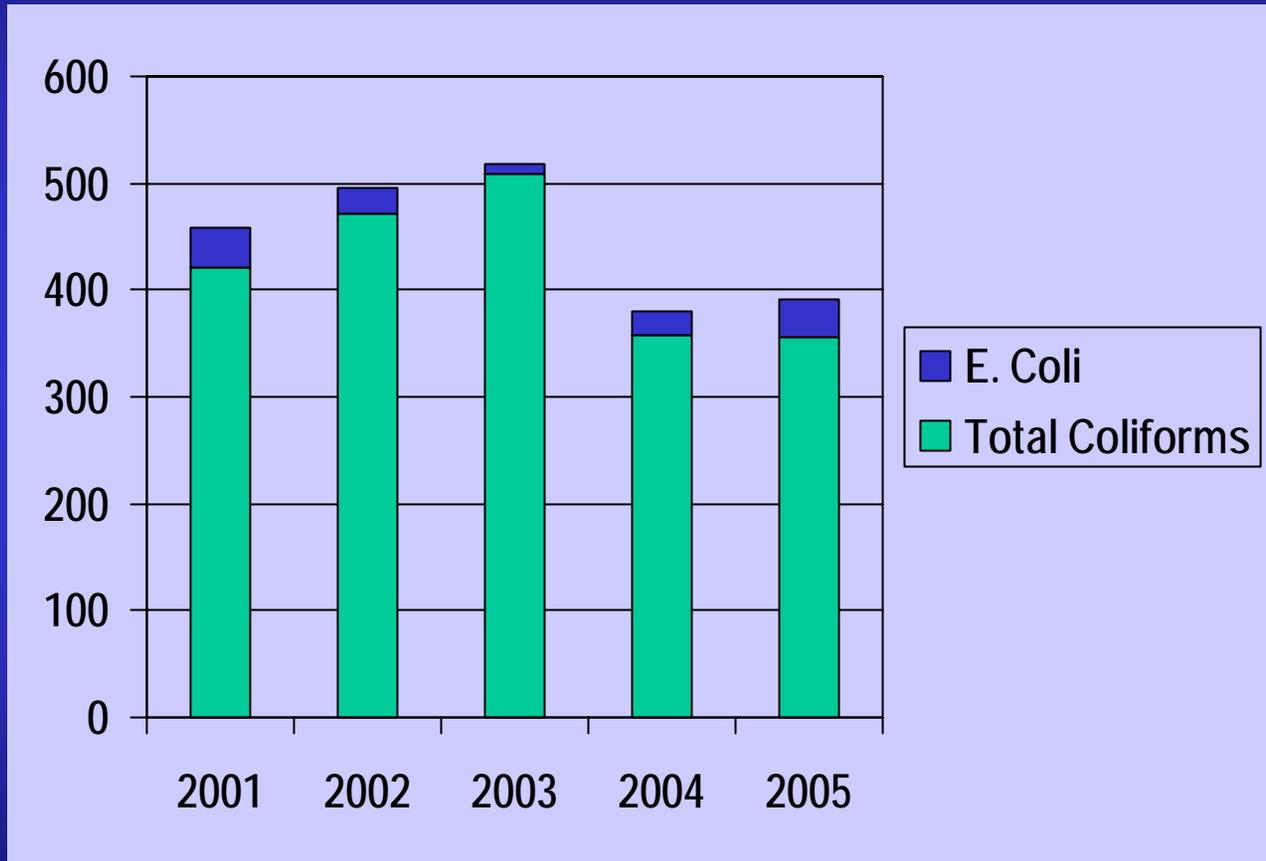
water Friday and flushing out pipes in hopes of wiping out any remaining contamination.

As word filtered out through the community Friday morning, phone lines at the water department, health district, City Hall and other government offices were quickly clogged with residents and business owners seeking information.

## But why focus on bacteria?

- 💧 Most common type of Maximum Contaminant Level violation issued by this office
- 💧 By extension, it's the most likely type of violation you will encounter.
- 💧 This does not mean that your employer's emergency response plan should not focus on other situations

# Total Coliform and E.coli violations





# What's wrong with this picture?



💧 If the pipe is screened, how did the bird get in there?

So what, here's a flooded well pit?



Would you drink water from this well?



Count the mouse traps...



find the mouse...

# Code of Ethics

💧 New England Water Works, Operator Certification Committee has developed a Professional Code of Ethics

“Obligation to Protect the safety, health and welfare in performance of his or her duties”

“Shall be truthful in all professional reports, statements or testimony”

# Resources on the DPH website

- 💧 Training dates for our basic operator course are posted
- 💧 Renewal (list of approved courses and approved providers) and exam information
- 💧 Operators available for contract
- 💧 Operator responsibilities
- 💧 Our operator newsletter



# Acknowledgements

- Information about Walkerton in this presentation was obtained from the following sources:
  - Presentation entitled “On-site Assessment of the Water Operator” by the State of New York Department of Health
  - Presentation entitled “Ontario’s Strengthened Operator Certification Program” presented by Brian Gildner of the Ontario Ministry of the Environment at the annual conference of the Association of Boards of Certification (ABC) in Las Vegas Nevada on January 26, 2006.
  - Original graph showing the number of TCR and E.coli violations issued from 2000 to 2005 was obtained from a presentation entitled “All coliforms are not created equal!” presented by Darrell Smith on February 28, 2006 at ATCAVE.
  - Bristol Water Department headlines obtained from a presentation entitled “Life in the Fast Lane” presented by Dr. Pat Checko on February 28, 2006 at ATCAVE.

# Where to get more information...

- 💧 CT DPH-Drinking Water Section  
<http://www.dph.state.ct.us/BRS/Water/DWD.htm>
- 💧 EPA-Office of Water  
<http://www.epa.gov/ow/>
- 💧 American Groundwater Trust  
<http://www.agwt.org>
- 💧 Water Systems Council – Wellcare Program  
<http://www.watersystemscouncil.org>
- 💧 American Water Works Association  
<http://www.awwa.org>
- 💧 National Groundwater Association  
<http://www.ngwa.org>

# THANK YOU

