

Legionella Cooling Tower Study
Allegheny County Health Department
Summer 2016

Fill out prior to interview:

Interview ID: _____ (Type and #)

Building name: _____

Building type: _____

Address: _____

Phone number: ____-____-____

Survey attempts (*please make 3 attempts to survey the building manager*):

__1 Date __/__/____ Time __:__ am/pm Interviewer: _____

__2 Date __/__/____ Time __:__ am/pm Interviewer: _____

__3 Date __/__/____ Time __:__ am/pm Interviewer: _____

Hello, my name is _____ and I am calling from the Allegheny County Health Department. We are conducting a survey of building managers to determine cooling tower maintenance practices for the prevention of Legionnaires' Disease in Allegheny County. May I please speak with the building manager?

Once you have the building manager on the phone (Leave 2 messages (list 578-8346 in voicemail) and then start over to find new contact person at main number):

Hello, my name is _____ and I am calling from the Allegheny County Health Department. We are conducting a survey of Allegheny County building cooling towers to determine maintenance practices.

1. Does your facility have a cooling tower?

__ Yes __ No __ Unknown

If yes, move on to question 2

If no, thank the building manager for their participation and skip to the Survey Conclusion section.

If unknown, ask if the interviewee to provide you contact information for a person that would know whether this building has a cooling tower and could answer questions about cooling tower maintenance.

Name of additional contact: _____

Title: _____

Phone number: ____-____-____

If you obtain an additional contact, please call this person and attempt again to complete the survey

All information collected through this survey will be kept completely confidential. No information about individual buildings or building managers will be released and no individual information will be shared with regulatory agencies. This survey will take about 20 minutes to complete.

Do you wish to continue with the survey?

Yes No

If no, please write the reason the building manager gave: _____

If no, thank the building manager for their consideration and skip to the Survey Conclusion section.

I will begin by collecting your contact information in case we have to reach you again with further questions.

Name of the person being interviewed: _____

Title: _____

Phone number: ___ - ___ - _____

Date of interview: __/__/____

Name of Interviewer: _____

Only ask this question if the building is listed on the skilled nursing, personal care or senior high rise list:

How would you classify your building? (mark multiply if necessary)

Skilled Nursing Facility

Personal Care Home

Assisted Living Facility

Independent Living Facility

Senior Apartment Building

Other: _____

General Cooling Tower Information

2. Does your facility have a Water Treatment Provider that manages your cooling tower(s)?

Yes No Unknown

If the building manager indicates that the cooling tower(s) is maintained by a Water Treatment Provider and they would be more appropriate to answer questions about management, cleaning, biocide treatment, then record the WTP contact information here (BUT CONTINUE SURVEY WITH BLDG MANAGER SO THEY CAN ANSWER AS MUCH AS POSSIBLE):

Water Treatment Provider Company Name: _____

Water Treatment Provider contact person: _____

Phone number: _____

Email: _____

i. How often are they on-site? _____

ii. Do they provide a progress report?

Yes No Unknown

1. How often does the Water Treatment Provider send you a progress report? _____

b. How many buildings does your facility have? ____

c. How many cooling towers does your facility have? ____

d. Is there a single cooling tower for your facility or are there multiple on multiple buildings?

Single cooling tower

Multiple cooling towers on one building

Single cooling towers on multiple buildings

Multiple cooling towers on multiple buildings

e. Does a single cooling tower have multiple cooling tower cells with individual basins?

Yes No Unknown

If yes, then:

i. Does each cooling tower cell have a unique treatment system?

Yes No Unknown

f. Notes for the number of buildings and cooling towers on each building:

g. Is your cooling tower(s) currently on?

Yes No Unknown

h. When is the cooling tower(s) turned on and off and how alternation of on-line cells? (indicate months or dates)

i. What type(s) of cooling tower(s) do you have?

Direct or open circuit system (circulated water has direct contact with the open air providing a chance for water contaminated with bacteria to be aerosolized, as drift or otherwise, into the air)

Indirect or closed circuit system (fluid cooler which cools the fluid rather than the water itself, but evaporative water still cools the tube with fluid so there is still chance for evaporated water to be contaminated)

Unknown

Cooling Tower Management

3. Do you have a designated individual or multiple individuals on site who are responsible for the maintenance of the cooling tower(s) and record keeping?
__ Yes __ No __ Unknown
- a. *Please list their names and title(s):* _____

- b. If there are multiple responsible people, how many are there? _____
- c. Are there people responsible for cooling tower management off site?
__ Yes __ No __ Unknown
4. Is a cooling tower operation manual available on site?
__ Yes __ No __ Unknown
5. Does your building have a Building Management System (BMS) or Building Automated System (BAS)?
__ Yes __ No __ Unknown
6. Has a risk assessment and management plan been developed specifically for your cooling tower(s)?
__ Yes __ No __ Unknown
- a. What year was it developed? _____
- b. Who was it developed by? _____
- c. What sort of information does it contain? _____

Cooling Tower Cleaning and Maintenance

7. Is your cooling tower(s) regularly cleaned?
__ Yes __ No __ Unknown
- a. How often? _____
- b. Does your facility perform all cleaning or do you contract the cleaning out to a company?
__ Clean in-house
__ Contract out, Company: _____
- c. Please describe the cleaning process: _____

i. Is the basin or remote sump tank cleaned?
__ Yes __ No __ Unknown

ii. Does your cooling tower have drift eliminators (*that function to limit the escape of drift, aerosols, which reduces water loss and the potential for Legionella exposure*)?
__ Yes __ No __ Unknown

iii. Are the drift eliminators included in cleaning? __ Yes __ No __ Unknown

8. Is the incoming or make-up cold water treated or softened?

__ Treated, Describe: _____
__ Softened
__ No
__ Unknown

9. Does your cooling tower have a water filtration system?

__ Yes __ No __ Unknown
a. What type (side stream filter?): _____

10. Is your cooling tower(s) inspected routinely?

__ Yes __ No __ Unknown
a. How often? _____
b. By whom? _____
c. Describe the inspection _____

d. Are the conditions of air entrance fill and exit surfaces examined regularly? (*fill achieves improved contact between the water and the cooling air to cool more efficiently*)

__ Yes __ No __ Unknown
i. How often? _____

ii. If there is evidence of fill fouling (*accumulation of foreign matter*), are any actions taken?
__ Yes __ No __ Unknown

iii. If yes, please describe: _____

11. Is the basin or remote sump tank regularly emptied of stagnant water or low flow water?
 Yes No Unknown

a. How often? _____

Cooling Tower Structure:

12. Please describe where the cooling tower(s) is physically located on your building:

13. Is the cooling tower(s) located near windows or air inlet conduit (where air is taken into the building)?

Yes No Unknown

14. Is the cooling tower(s) protected from sunlight?

Yes No Unknown

15. What is the cooling tower water source (well or municipal)?

Well water

a. Is the well water permitted by DEP?

Yes No Unknown

b. Is the well water treated

Yes No Unknown

i. Describe treatment: _____

Municipality water

c. Municipal water authority name:

Unknown

16. Has there ever been evidence of system water leakage?

Yes No Unknown

Biocide/Disinfectant Usage:

17. Is a biocide or disinfection treatment program applied regularly to your cooling tower(s)?

Yes No Unknown

- a. How often? _____
- b. What type of biocide is used?
- Chlorine
 - Bromine
 - Chlorine, bromine mix
 - DBNPA glutaraldehyde
 - Quaternary phosphonium salts
 - Isithiazolines
 - Other: Describe _____
 - Unknown
- c. What category of biocide?
- Oxidizing (i.e. chlorine, chlorine dioxide, bromine, chlorine bromine mix, etc)
Type of oxidizing biocide: _____
 - Non-oxidizing (i.e. organic compounds registered with EPA such as DBNPA glutaraldehyde, quaternary phosphonium salts, isithiazolines)
Type of non-oxidizing biocide: _____
 - Unknown
- d. Do you test for presence of biocide in cooling tower water?
- Yes No Unknown
 - i. What range do you aim for? _____
 - ii. Do you do anything if improper amount of biocide is detected? _____

- e. Do you have an automatic biocide treatment system?
- Yes No Unknown
 - i. Intermittent release system or continuous dose system?
 - Intermittent
 - Continuous - ii. Describe system: _____

- f. Is the type of biocides alternated regularly?
- Yes No Unknown
- g. Is biocide applied before cleaning the cooling tower?
- Yes No Unknown

Record Keeping:

18. Are water treatment and maintenance records kept for your cooling tower(s)?

Yes No Unknown

a. Are water treatment services/testing results recorded regularly?

Yes No Unknown

b. Is routine maintenance recorded?

Yes No Unknown

c. Are inspection dates and results recorded?

Yes No Unknown

d. Are routine maintenance dates and modifications recorded?

Yes No Unknown

Cooling Tower Testing:

19. Is your cooling tower(s) tested for bacteria (e.g. Total Bacteria, HPC or Dip Slide or Lab Culture)?

Yes No Unknown

a. How often? _____

b. What specifically is tested?

Total bacteria

Heterotrophic plate count

Other: Describe _____

Unknown

c. What method is used?

Dip slide

Lab culture (send out)

Other: Describe _____

Unknown

20. Is your cooling tower(s) tested for *Legionella*?

Yes No Unknown

a. How often? _____

b. Who performs testing? _____

c. Describe how samples are collected and laboratory methods for processing:

d. Has your cooling tower(s) ever tested positive for *Legionella*?

Yes No Unknown

i. What did you do in response to the positive?

e. Are you aware of the association between cooling towers and the bacteria *Legionella*?

Yes No Unknown

If no, read the following: **Sometimes cooling towers are poorly maintained and *Legionella* bacteria can grow. Legionnaires' Disease is a form of pneumonia that people get from inhaling water with *Legionella* bacteria in it. People can become very sick from this bacteria and sometimes die.**

Continue reading if they know about cooling tower, *Legionella* association: We are asking building managers about their cooling towers to find out more about maintenance practices that prevent *Legionella* growth. Your responses to this survey will help us develop recommendations for Legionnaires' Disease prevention in Allegheny County.

f. Are *Legionella* testing records kept?

Yes No Unknown

If Legionella testing is routinely conducted and records are available, please ask the following question. Otherwise, please skip.

21. Would you be willing to fax the results of your most recent cooling tower *Legionella* test to the Allegheny County Health Department as part of this survey? The results will be kept completely confidential. Shared results will be aggregated with other results from Allegheny County cooling towers to estimate *Legionella* contamination risk associated with maintenance practices.

Yes No

If yes, please provide the ACHD 542 Fourth Ave BASE fax number (412) 578-8025. If they prefer to mail the results, please share the 542 Fourth Ave. Pittsburgh, PA 15213 address.

If no, please read the following:

Thank you very much for your participation. If you change your mind about sharing *Legionella* test results, please give me a call back (412-578-8346). Providing us this recent test result would provide us important information as we develop cooling tower maintenance recommendations in Allegheny County. No facility-level *Legionella* test results will ever be shared with the public.

If Legionella testing is not routinely conducted or test results will not be shared, please ask the following question. Otherwise, please skip.

22. Would you be willing to have your cooling tower(s) tested for *Legionella* by the Allegheny County Health Department free of charge? The results will be kept completely confidential. Results will be aggregated with other results from Allegheny County cooling towers to estimate *Legionella* contamination risk associated with maintenance practices.

Yes No

If yes, please explain that the interviewee will soon hear from a representative from the Allegheny County Health Department to schedule a testing date.

If no, please read the following paragraph:

Thank you very much for your participation. If you change your mind about health department testing, please give me a call back (412-578-8346). Testing your cooling tower would provide us important information as we develop cooling tower maintenance recommendations in Allegheny County. No facility-level results from this health department sampling will ever be shared with the public. The results of cooling tower testing would also help your facility determine if your cooling tower maintenance practices should be changed to prevent *Legionella* growth.

Read the following if the building manager asks what will be done if positive results are found:

If your cooling tower(s) tests positive for *Legionella*, then the health department will recommend you work with either your Water Treatment Provider or a suggested company that specializes in the control of *Legionella*. These entities will then be able to advise remediation of the cooling tower(s) to reduce the amount of *Legionella*. In the past, buildings with cooling towers involved in Legionnaires' Disease outbreak experience serious consequences; however, prevention measures are available to avoid these situations. This one-time testing is a useful start to determine any risk associated with your cooling tower and develop a plan for risk reduction. Costs associated with risk reduction far outweigh costs associated with a Legionnaires' Disease outbreak.

Survey conclusion:

Thank you very much for your participation. Would you like to receive any cooling tower maintenance information? *If yes, send CTI Cooling Tower Guideline, ASHRAE 2000 and 188.*

Please contact Lauren Torso at the Allegheny County Health Department (412) 578-8346 with any additional questions.